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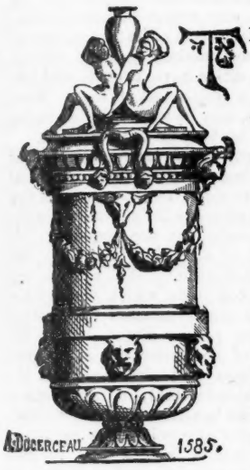
The National Gallery.



THE estimates now before the House of Commons for the present year include the sum necessary for the completion of the brick buildings which, as our readers are aware, have been added to the present National Gallery in Trafalgar-square. The time is, therefore, now come when the public will expect to hear something of the National Gallery of the future, which has so long been promised.

Nearly seven years have elapsed since Lord John Manners, who was then First Commissioner of Works, informed the House of Commons that the Government were acquiring the necessary enlarged site on which to build a new National Gallery, from the designs of Mr. E. M. Barry, R.A., who had been appointed the architect.

We find by reference to the Parliamentary estimates that the site has been bought at a cost of upwards of 140,000*l.*, and has been for some years in possession of the Government, so that the loss of interest on the purchase-money must amount by this time to a considerable sum.

The new buildings at the back contain several large, handsome, and well-lighted galleries. They are almost completed, and will be ready to receive the pictures during the present summer, so that there need be no difficulties on that account as to proceeding with a more comprehensive plan. Some of the national pictures are now at Kensington, and by screens, and temporary arrangements in the new galleries, room might no doubt be found for all or most of the pictures now in Trafalgar-square, during the process of rebuilding. At the present moment, the only effect of the new galleries, with their skylights and chimneys appearing above the roof of the existing building, has been to add a new deformity to the latter, and to render its lowness so apparent that it has become more than ever impossible to leave things as they are.

Readers of the *Builder* will not need to be reminded of our views with regard to the erection of a National Gallery worthy of the nation, and we are glad to notice that Mr. Beresford Hope has announced that he will call attention to the subject in the House of Commons immediately after the Easter recess.

According to papers laid before Parliament in the Sessions of 1869 and 1870, it appears that as long ago as 1868, the architect had been directed to prepare his designs and estimates; and had been informed that the new building would be at once commenced. No explanation has ever been given, as far as we know, of the long delay that has since occurred, and it appears to us high time to ask, on behalf of the public, how many more years are to elapse before they are in possession of a National Gallery fit to hold its own with those of Paris, Munich, Dresden, and Berlin.

The necessity of the work has been repeatedly affirmed by Parliament, which has passed the Act for compulsory purchase of the site, and has voted funds to carry that out. The architect has been appointed; the site is ready for the building. Why is the latter delayed? Surely a trifle might be spared from the millions devoted to ironclads, if the Chancellor of the Exchequer be the cause. The country is not so poor, nor so dead to artistic sympathies, that it will grudge the moderate sum required for properly housing our national pictures, of priceless value, constantly increasing in number, and adorning with a noble building the heart of the metropolis. The present seems a golden opportunity for an energetic and art-loving Minister, and we sincerely trust that Lord H. Lennox will be able to give, ere long, a satisfactory answer to the question, which has so often been asked on behalf of the public, "When are we to have the long-promised National Gallery?"

THE REGISTRAR'S THIRTY-FIFTH LIFE AND DEATH ROLL.

THE old, old question, "Doth not wisdom cry, and understanding put forth her voice," is as applicable in the present day as it was in the time of Solomon. But that cry, in one important matter, is not only far louder than was the case of yore, but, year after year, it is more distinctly articulate. Since we have begun, slowly and imperfectly, indeed, but yet with some sense of duty, to listen to the voice, what was once but a hoarse and hollow sound has assumed all the distinctness of a scientific lecture.

The last utterance of this Public Instructress takes the name of the thirty-fifth Report of the Registrar-General. Those hard facts, deaths, are so marshalled by the magic of statistics as to have precious uses for the survivors. So often have we, and those who share our views, referred to this important subject, that it is hard to find anything new to say. And yet it is but too true that it is needful again and again to repeat the warning which comes home,—or the neglect of which may suddenly and fatally come home,—to each hearthside in the country. Especially is it the urban resident who has occasion to ponder the lesson read him by the returns of mortality.

One point respecting the returns of deaths is worthy of very attentive thought. There is, probably, no country in the world in which so much heed is paid to the protection of life from violence, or even from accident, as is the case in England. In our laws murder assumes a shape of flagrant enormity, at which Eastern nations stare aghast. The coroner can open every door. In the eye of the law the infant of the poorest outcast, even before its birth, has a right to the protection of justice. Nor is this theory only. No year passes without sharp proofs that the theory is put in practice. Great inequalities exist, and must exist, in an old and complicated civilisation. The law, too often, must in the very nature of our institutions be more easy of access to the rich than to the poor. But in this one case of the protection of life, there is the most absolute impartiality. Justice requires but the shadow of an indication to be put upon the scent of murder, however feeble and unobserved the victim; and, once put on the scent, the officers of the law have here the untiring perseverance of the sleuth hound.

A people so honourably distinguished for their respect for human life as are the inhabitants of the United Kingdom in general, evince this respect not only by the nature of their laws and of the administration of justice, but by the means of private association. The Royal Humane Society is a case in point. Here we find a very meritorious association of persons, funds collected, a service organised, rewards of an honourable and highly-prized character publicly given, for the protection of human life from accident. This accident may arise from the irresistible operation of the great forces of nature—the winds, storms, and floods; or from the inexcusable folly of the sufferers, as in the case of those who venture in crowds on unsafe ice. Neither does the magnitude of the peril deter, nor the criminal folly of the sufferer disgust, those who seek to rescue life from the water. A noble and generous impulse must underlie such an organisation as this.

One great aim, then, of the friends of sanitary reform should be, to bring clearly home to the knowledge of Englishmen, as a nation and as individuals, that we live in the daily sufferance and neglect of causes of preventible death far more efficient in their activity than are either those evil passions that lead to murder, or that wrath of nature, or heedlessness of man, that leads to drowning. Only 125 intentional homicides appear noted in the returns for the year 1872. How many preventible homicides have fever, phthisis, and other destructive scourges of neglect, occasioned in that twelvemonth?

We find in healthy districts the death-rate of that year to fall as low as 17 per 1,000; indeed, in Surrey it has been, excluding the metropolis, as low as 16·3 per 1,000. In Durham, on the other hand, it rises to 25·4 per 1,000. In Lancashire it is as much. In the West Riding and in Staffordshire,—great furnace-feeding districts,—but little lower. If we leave details for general results, we find a difference between a minimum of 16·3, and, not a maximum, but an average, of 21·3 per 1,000; that is, a difference of exactly five per *mille*. Five thousand per million! One hundred and twenty thousand for twenty-four millions! Our great and costly machinery of criminal justice is set in motion to meet danger which is represented by an annual toll of 125 lives by homicide, together with all those minor crimes of violence of which these homicides form the most aggravated class. What is our machinery, and what our thought, for obviating the danger represented by one hundred and twenty thousand preventible deaths; attended, as they are, by an amount of sickness and suffering not disproportioned to that of the minor crimes of violence attendant on the intentional homicides?

This is an eminently practical view. As such it befits an eminently practical people. It may be urged that we could not expect to attain, in every case, the production of such salubrity as is evinced by the lowest death-rate. True. On the other hand, it is not possible to state how far this lowest rate might be reduced by sanitary care.

But we need not place the matter on that footing. The margin is a terribly wide one. If we look at the difference, not of five per thousand, but of only one per thousand, it represents no less than twenty-four thousand preventible deaths. These, too, as we know, are taken for the most

part either from the flower of the population, or from its very hope, the young. Twenty-four thousand against a hundred and twenty-five is disproportion enough for our argument; and in stating deaths preventible by the sanitary care at one *per mille*, we are very, very far below the lowest possible *minimum*.

We can see something of this even in the returns under notice. It will be within the recollection of our readers that we have not unfrequently called their attention to the subject of health-maps; or the graphic delineation of the degree to which different types of disease prevailed in different parts of the country, and this might be intelligibly traced to distant causes. One of the most important results of this kind of study was the light it threw upon the character of phthisis, or pulmonary consumption. It became clear, from unmistakeable indications, that the phthisis death-rate depends directly on the damp character of the soil. Before good sub-drainage phthisis disappears. With the neglect of that drainage, and the return of dampness to the soil, phthisis returns. That is a fact quite clear from individual cases. We can now see something of the same operation on a larger scale. While we are doing but little of what we ought to do, we are yet doing something. Drainage is going on. Every year, by one means or another, soil formerly unfit for human abode is becoming better fitted for the purpose. We may, therefore expect that, over the total area of Great Britain, phthisis should appear to be on the decrease. Such, accordingly, is the case. From 1850 to 1859 the mortality from phthisis was 27 per 10,000. From 1860 to 1869 it was only 25 per 10,000. This represents a reduction in the fatal force of this terrible evil, over the average area of the country, of no less than eight per cent. That is a very appreciable and a very consolatory fact. It would be difficult to cite any fact more directly in support of the sanitary argument. It would be difficult to ask for a more crucial test of the truth of the promises made by the sanitary reformer. The deaths from all causes in 1872 are returned at 492,465. Those from phthisis are 52,589. That is to say, rather more than one death out of nine, or more than eleven per cent. of the whole death-rate of the year, was due to phthisis. A reduction of eight per cent. on the ravages of this formidable malady is thus nearly equivalent to the reduction of one per cent. on the total annual mortality. That is what has been already effected, according to the statistical returns. And as we are dealing with the whole area of the country, and with decennial averages, we think there is little room to dispute the accuracy of this calculation.

On the other hand, we have to deplore the increase of another branch of respiratory disease. The fact is so remarkable, that at first we may almost be inclined to put the question, is it a physical or only a statistical phenomenon? If we were dealing with distant periods of time, it would be almost more natural to suppose that the latter was the case. We might think that, in the advance of medical knowledge, or in the fluctuations of that fashion which affects medicine as well as less noble occupations, deaths were now attributed to bronchitis which were formerly set down to phthisis. Our medical friends will correct us if we err in thinking that this is not likely to have been the case within so short a period as the last quarter of a century. If this be so, we find that while deaths from phthisis have declined from 27 *per mille* to 25 *per mille*, deaths from all respiratory diseases, including phthisis, have risen from 30 to 34 *per mille*. This shows a serious increase in the death-rate from *bronchitis*, and from all respiratory diseases other than that of the lungs. Subtracting the 2 *per mille* of gain, we have a gross loss of 2 *per mille*, or a net loss—by the bronchial affections—of 6 *per mille*. If we can account for the lowered death-rate from phthisis by the drying of the soil, are there any reasons to be assigned for the augmented death-rate attributed to *bronchitis*? As to the certitude of the latter fact, there is no room left for doubt; as, even if any change had occurred in the mode of classification, we still have a greater number of deaths from non-pulmonary respiratory diseases.

We think it is not difficult to point to such a cause. No one who is familiar with London can doubt the fact that residence in the metropolis during the winter season is annually becoming more trying to the constitution. The same, no doubt, is the case with all our large centres of population. The rate of increase of the metropolis, we have before had occasion to point out, is such as to double the population in forty years. There is a tendency to a slow but appreciable increase on that tremendous rate. What does this imply? It involves, among other things, speaking in round numbers, the pollution of the atmosphere of London at a rate which increases the difficulty of respiration every year by 2½ per cent. Turn and twist it as we may, we can not get away from this. Now a theoretic vitiation of the atmosphere is one thing—a sensible and oppressive vitiation of it is another. That this oppressive state is often prevalent in London, we suppose no one will be so hardy as to deny. What household passes the winter without colds and coughs? Happy are those who have no more severe trial of the respiratory organs. In coming into London from a pure country air, the irritation caused by the loaded atmosphere of the metropolis is at once perceptible. There is a depressing influence exerted by the want of bright sunlight and open vision; but, beyond this, there is an incipient tendency to cough. The same may be said as to Leeds, Manchester, Swansea, and many other of our great towns. But in London, besides the enormous size of what is rather a province than a town, the fact of being in a river valley gives an unusual coherence and tenacity to the fog. From hundreds of thousands of chimneys a constant smoke-offering is poured forth. With every decrease of temperature, occurs a certain deposit of damp from the atmosphere. A sudden fall is like the squeezing of a sponge. Thus occur some of those dense November fogs in which a face is not to be recognised at a couple of yards' distance. These extreme cases are rare; but the same causes are always at work, with more or less activity. For thirty miles,—we think that we are within measure in speaking, from personal observation of double that distance,—a haze is perceptible, when the wind sets in from the direction of London, which shows that the highly-charged atmosphere that canopies the great city has not become purified altogether, even in a journey of that length. We are not wishing to say anything undutiful to that great metropolis, to which so many of us are bound by so many ties. But no one can say that the atmosphere of London, in the winter, is conducive to the health of persons of delicate respiration.

So far as the observation may be permissible, without infringing the special province of medicine, we suppose that the immediate cause of bronchial attack is, in nine cases out of ten, a sudden and severe fall of temperature. That, of course, is much the same everywhere. It is worse, however, in a damp climate, whether it be a river valley or an upland glen, of impervious soil, especially on the upper chalk. Those portions of the metropolis which stand on hills of gravel are sensibly more healthy, in this respect, than the lower and river-side districts,—more so, indeed, than many a country village. But the power, either local or general, of the throat, lungs, and constitution to resist and throw off the effect of such a sudden shock, is sadly lowered by a previous and long-continued irritation. Thus we see good reasons, not only for understanding the cause of an increase in certain respiratory complaints which, at first sight, may appear to be inconsistent with the arguments of sanitary reformers, but for fearing that, unless remedial measures be specially adopted to meet this evil, the mischief may be steadily on the increase.

It is not now for the first time that we have to express the opinion that what is called the smoke nuisance—for in plain terms it comes to that,—is a subject that will task the energies of practical science to reduce within reasonable limits. But we confess that the statistics we have above cited seem to point to the conclusion that the subject is not one that can be long postponed without mischief. There are limits to all things. Many people have inquired—what can limit that great movement of the day, the rapid growth of cities? The answer has been suggested in our pages. A certain degree of vitiation of the atmosphere will cause such a limit. If the matter were left to itself, we suppose that a gradual check would be put to building by a steady depreciation of the value of property. We have witnessed an immense change in the manner in which the City of London is occupied, as compared with former times. The great merchants, the Greshams, and Whittingtons, and Walworths, who were proud of their city and of their urban homes, who might go forth to take the air, and witness the practice at the butts, at merry Islington; or who might even (if they belonged to the Alpine Club of those days) ascend the steep and lofty hills of Highgate for a rural excursion—what would they think of the City now? What would they think of that steady, constant, rapid tide, flowing in two directions without mingling its streams, that rushes during so many hours over London Bridge? What of the pulsating discharges of human crowds from the termini of the railways? That spot which was once the centre of all that was most solid, mature, and comfortable in English civil and domestic life, is now converted into a great office; into which men rush, as late as they can, and whence they fly, as early as they can. It is true that rents have not fallen by the change—land that was bought for silver is sold for gold. Houses that once were proud of their three stories are replaced by those which boast their six or seven. We are not predicting that a like change can ever affect the entire metropolis. But that some great change may be expected to result from the constant deterioration of the climate we think is certain, unless that change can be arrested. A great city might become as uninhabitable from the vitiation of its atmosphere by the products of combustion, as from *malaria* itself. That great cities have been turned into ruinous heaps is a well-attested fact. Here, under our very eyes, may be traced the increasing activity of a cause tending in that direction.

We gather, then, from these minute but pregnant facts,—these annual and decennial changes of 1 or 2, or 6 per cent.,—not that the labours of the Sanitary administrator are uncertain in their result, but the contrary. We see that sure test of scientific knowledge, the verification of prediction. We see in one instance, that of a disease which we may say has only been incidentally affected by sanitary works (as it is not to the direct, but to the incidental effects of the introduction of good systems of sewerage and drainage that the diminution of phthisis is due), an improvement effected in the public health that is appreciable. Not only is it directly appreciable, as matter of cause and effect, but it is of a very sensible magnitude. Seven hundred fewer deaths occurred from phthisis in 1872 than in 1847. But, in that same period, the deaths from bronchitis have nearly trebled. The actual numbers are as follow,—and the increase in the population of the United Kingdom during the time covered must be borne in mind. Deaths from phthisis were, in 1847, 53,317; in 1872, 52,589. Deaths from bronchitis were, in 1847, 16,499; in 1872, 42,752.

With this one exception, which is ground not for discouragement but for fresh activity, the returns for 1872 are, on the whole, encouraging. The general death-rate for the year is, within eight per ten thousand, the lowest yet recorded. It is 1 per cent. lower than the average since 1837. Those diseases which it is within the power of man to stamp out, so that he will take the proper steps, have been materially checked. Scarlet fever and diphtheria have killed only 6·15 per 10,000, while for an average of twenty years they killed 10·46 per 10,000. Other fevers have been reduced from the death-rate of 9·18 per 10,000, to that of 6·12 per 10,000. On the other hand, cholera and diarrhœa have been unaltered in their virulence, and whooping cough, probably rendered more fatal by the same causes as bronchitis, has shown an increase.

There is one point as to which we have to speak, not, indeed, with hesitation, but with care, lest we should be thought to blame where we are desirous to praise. We mean as to the date of the Report. We refer, not only to a delay of six months, as to which some apology is made, but to the broad fact that the Report for the year 1872 should not appear until the year 1875 is nearly one quarter gone. We wish, once and for all, to express the highest sense of the devotion shown by the medical profession as a whole, and by its distinguished official members in particular, in the discharge of their sacred duties. We have no doubt that every one who could glance at the journals, or trace the life, of the officers concerned in bringing this Report before the public, would find only one cause for censure, namely, that there had been a devotion to public duty at the risk of the private duty of attention to proper periods of rest and relaxation. But that premised, and never to be lost sight of, the fact remains. It is a mischievous fact. And, regarding its source, it is, we think, an inexcusable fact. It results from that costly parsimony, that utterly foolish wisdom, which has rendered recent legislation on sanitary matters so nugatory. An establishment must be terribly

underhanded that thus lags behind the course of time. Reports, issued so late, have a value so depreciated, in comparison with that of a timely report, as to be comparatively worthless. What is the use, in the debates now impending, of citing the statistics of 1872,—while those of 1873 and of 1874 are unknown? We can tell nothing of what we are now doing,—we only know what was done,—say in 1870 and 1871,—from such details. An organisation that will bring down the knowledge of facts to the time actually present is imperatively demanded.

With this needful promptitude of publication should be associated the no less important requisite of graphic delineation of facts. One great evil of the last Public Health Act was the opinion apparently entertained by the framers, that any bricklayer might make a drain, and that all that was needful was for the doctor to complain if the drains were absent or stopped up. The position which the scientific graphic professions must infallibly occupy, in any practical measures, was studiously ignored. Here we see one result. To say nothing of the fact that all kinds of statistical reports could be more especially framed, as a rule, by men educated to that mode of work, we look at the mode of the presentation of facts to the public mind. It would be easy to issue such an annual series of health charts as would not only tell the conservators of health exactly what we are doing year by year, but as would inform and interest the public, and associate them, as intelligent fellow-workers, in the cause of sanitary reform. We sincerely trust that a Government which appears to have the health of the country seriously at heart, which dismisses those political causes of disturbance which have lately resisted the wise consideration of truly reformatory measures, will give due attention to this great blot in the latest legislation. To bring fully, rapidly, and clearly before the country the main facts of the sanitary movement, will do more to aid that movement than can be done by any other means that can be devised. A graphic mode of illustration is that which is most striking, certain, and effective. We earnestly desire that this proper and natural aid to the study of sanitary science should be granted to the country.

FOREIGN CRITICISM ON OUR PUBLIC WORKS ADMINISTRATION.

HAVING gone at some length into the report to the French Government on our railway system, we may glance at one or two of the French Commissioners' notes *du Régime des Travaux Publics en Angleterre*,* in regard to some other less complicated but still important branches of his subject; a word or two conveying the impression of a well-informed stranger being often useful and suggestive in setting things in a new light. Roads and bridges naturally follow railways; and the reporter notes the simplifying system by which, in our legislation, all classes of road, way, or path come under the general denomination of "highways," and are dealt with on the some footing; but there is nothing for special comment in his brief statement of our road administration, except indeed as to the absence of any legal requirement in regard to vehicles carrying lights,—an omission which, as he says, the greater part of London cab-owners avail themselves of. The turnpike system is clearly regarded as a decaying one, and in the last twenty years the number of roads subject to this impost has diminished from 1,112 to 635, of which 110 will become free in 1882, or not much later. The *rationale* of the turnpike charge seems to be rather puzzling to our author, since he draws special attention to the fact that its existence does not the least relieve the parish in which the toll is levied from its legal liability to keep the road in repair. Perhaps the system is not less puzzling to ourselves; it is, at all events, one of the small nuisances which should be abolished, at least where the law of parochial responsibility is in force. This, however, does not extend to Scotland, which, in the matter of roads, is very exceptionally legislated for, perhaps because, till rather recent times, the only road of any importance to a Scotchman was the main road into England. Schedules of the mileage expenses on a number of the leading routes in the kingdom are given in very full form.

The tramways present to a foreign critic a curious chapter of persistent attempts on the part of speculators to procure Governmental sanction, met by repeated refusals; and even now that several companies are definitely established, the reports of police superintendents of the districts, quoted in the Report at some length, are strong and almost bitter in complaint against them as a public inconvenience. There may be some misapprehension here. Any attempt to introduce such a system into the centre of London would of course be an absurd error; but as a means of serving some of the suburbs the tramway offers advantages; and the French Commissioner seems to have drawn his information from prejudiced sources. A system which is largely used by the public must be, *pro tanto*, a public convenience; and we have always taken the opposition to the tramways to be chiefly on the part of carriage-owners, afraid for their own vehicles, and not sufficiently considerate of the majority who are not similarly provided. Complaints about damage to the roadways, registered in this report, seem exaggerated; the Westminster Bridge and Greenwich line, for instance, is specially charged in this respect. The remarks upon the inconvenience of having all the routes under different companies are to be noted; it is curious to see this mimic railway system going through the same course as the greater one; commencing with competition, to end (if the traffic is continued) in unification of interests.

The subject of road locomotives seems to have interested the French Commissioner considerably, and his pretty long report on their history, present facts, and future possibilities, ought to have attention here. It seems difficult to understand why our Government should have so pointedly hampered and thrown cold water upon this idea; the only valid objection to it, really, is the frightening of horses, which was considered just as forcible an objection to railways at the outset. It would surely not be impossible to make habituation to road-engines a part of the training of riding and carriage horses. It is perhaps scarcely known to many how largely road locomotives, in a certain sense, are in use in England already; for many of the steam-machines for reaping and thrashing, &c., are constructed to move themselves from place to place also. One large maker has furnished 1,000 of such machines, another more than 500, for England only. But the use of anything of the kind is very much hampered by the restrictive and sometimes inconsistent legislation in regard to them: the requirement that they are to be preceded, by about sixty yards, by a person with a red flag, who is also to give assistance to riders or drivers who may be incommoded by the machine; and a proprietor has been fined by the magistrates because the "person" in question (generally a boy), when engaged in helping to hold a restive horse, was not, at the same time, at the specified distance in front of his machine. The indifference of Government to the interests of road-engine proprietors is so marked that there is only one instance, we are told, of an appeal in this quarter from a locomotive proprietor for redress; this was on the 21st of April, 1872, and the answer arrived on the 13th of June following, indicating that the Secretary of State was ready to send an inspector to the place named, but the applicant must pay all expenses of the inquiry: a stipulation which had the calming effect probably intended. As to road engines for transporting passengers, the French Commissioner reprints Mr. Scott Russell's account, before a Committee of Inquiry of the Board of Trade, of his own attempt at working a line of carriages from Glasgow to Paisley, as a first experiment; of the beautiful carriages made for them by Mr. Learmouth, of Edinburgh, and the determined efforts of their kind friends in Glasgow to stop the traffic, which they eventually did by loading the road with heavy granite macadam to break the wheels of the carriages, which were run for some time at a daily loss from the breakages, till eventually an overturn and explosion, caused by this unprincipled form of opposition, did put an end to the service, which has not been resumed since. Mr. Russell's evidence was, however, that the conveyances were liked, and largely used by the public while they were run. The idea has certainly never had fair play in England; and in many localities road locomotive traffic might surely act well as a supplement to the railways, where the latter have not been or cannot remuneratively be constructed.

In regard to the "Régime des Eaux," under which head are included drainage works and river and canal traffic, the report is mostly confined to statistics; the canals are evidently regarded as a system in considerable danger of being entirely superseded, though the fact is recognised that for distances under sixty or seventy miles, the canals may, and in some cases do, compete successfully with the railways in goods traffic of certain kinds. In the chapter further on in the report, on Lighthouses and Beacons, the French report is not merely unfavourable, but almost contemptuous. The lighthouse administration is inconsistent and wanting in method, and this is no matter for surprise, when it is entrusted entirely "à des corps de *gentlemen* de diverses conditions," not one of whom has necessarily any scientific knowledge in regard to the lighting of lighthouses; so is the august *Trinity House* here characterised. The report of the English Commissioners on the subject is quoted to the effect that the management of the lighthouses is often practically out of the hands of any central authority, as the local agents cannot be got to send reports (though the keeper of the Peterhead Lighthouse showed so much zeal in the cause as to ask the president of the Commission for a lesson in cleaning reflectors); that the lights of Dover, Folkestone, and Newhaven present almost all the errors that can be possible in lighthouses, and that the contrast between these and the excellently found and lighted houses in the French ports, of even a secondary order, is not flattering to England. And when, in addition, the French Commissioner notices that in one place a red light signifies "danger," in another "security," that at Hull it means "left hand," and at Liverpool "right," it is not easy to quarrel with his conclusion that centralisation, with many inconveniences, may present serious advantages in some cases.

The closing chapter of the Report, in which the French and English *régime* are broadly compared and contrasted, is interesting. It is one of the subjects in which the institutions of Britain "differ most profoundly from those of France." In Great Britain, it is observed, there is no Minister of Public Works, nor any regular and separate budget in regard to that class of administration; wants which have been frequently signalised in our columns. And the essential distinction, in the opinion of our critic, between the English and French method is that in France the Legislature generally takes the initiative in any public work of this kind; in England, almost any one in the world except the Legislature. But when the project is admitted, the authority to carry it out is derived only from Parliament with us, while in France it may be derived from local administration. Parliament, in short, is all-powerful in England; and the decentralisation in this country, which has often been contrasted with the opposite tendency in France, is to a great extent more nominal than real (except in the case of the lighthouses, as aforesaid). The question in estimating the relative merits of the two systems is, whether the English system (or, we might say, want of system), by which great schemes, such as new railways, are left to individual initiative, "simply tolerated, but never assisted," would have sufficed to produce the same results in France. And the decision is "*que non*," the English public having both more enterprise and more capital than the French. The great lines of rail might have been produced in France by the spontaneous efforts of leading capitalists, but the smaller ones never would have been. The small capitalist in France has not the same spirit of enterprise. The publicity of preliminary proceedings in England before any great undertaking can be put in hand, is favourably contrasted with the more arbitrary French system, where Government engineers may often have it all their own way. In England, our critic observes, every one whose interests are concerned is heard, "and, what is better, is listened to." On the other hand, the gratuitous action of the French Government is favourably compared with our heavy Parliamentary expenses. The inspection system is, as might be expected, far more complicated in France. Our railway system is looked after by four Government inspectors, while our neighbours employ six general inspectors, seven engineers in chief, and seventy-eight ordinary engineers, &c.; in all more than 600 functionaries. The cause of the difference is again explained by reference to the character of the English public. The inspectors in England, though but four nominally, in reality "are counted by millions," for the public themselves fulfil these functions—and many others besides—with which in France the Government would charge themselves. "Let there be a delay or some small accident, and the *Times* re-

* See page 223, *ante*.

sounds with complaints, and under the head of 'Railway unpunctuality' the victims continue, during a week or so, to make known *urbi et orbi* that they were delayed an hour beyond the proper time, or that a booking-office had been opened too late," &c. This sensitiveness of the English public, and disposition to complain openly of the smallest thing in which it has been wronged, is no doubt a very important element in the way of keeping things going here; one which we may forget or underrate until thus reminded of it by the impression produced on a stranger. This difference in national character is, to the French Commissioner's eye, curiously illustrated also in the freedom of our railway stations, as compared with the French system of shutting up the passengers like so many cattle behind barriers and in *salles d'attente*. "You may shut up *Jacques Bonhomme* in this way," says the reporter, "but "you will hardly get *John Bull* to submit to it"; and he adds a lively and graphic sketch of the freedom and bustle of an English railway terminus. But the fact is, it is John Bull's great respect for constituted authority which renders it unnecessary to hedge him up in this way. We were witness to an amusing instance of this the other day, at a suburban station, where a crowd of passengers, mostly of the lower order, waited two or three minutes before a closed door leading out of the station, until an official came up and asked what they were waiting for; the door only required a push to open it, but no one had ventured to lay a hand on the sacred portal. The order, method, and absence of noise and confusion with which the most important trains are started in English stations, without shoutings or gesticulations, seems to have much struck the French visitor. Only one thing in our system is a difficulty for a stranger: the names of the stations are often by no means legibly or prominently written up, and sometimes half lost among a crowd of advertisements. This is a just complaint, and a defect which should be remedied. Of the Metropolitan Railway the report speaks with enthusiasm, and with reason; too much could hardly be said for the convenience and attention to public wants in this service; let us hope it may yet prove remunerative in the end.

In fine, we recommend this exhaustive and excellently-written report on our Public Works administration to all who are concerned with the subject; not only is it full of suggestive matter, but it presents a great amount of statistics in a very compact and comprehensive form, and in a manner as little dry as can well be in dealing with subjects of such a nature and in such a method.

THE PUBLIC HEALTH BILL.

THE Public Health Bill brought into the House of Commons by Mr. Sclater-Booth and Mr. Clare Read may be said to be the substitution of a book for a library. It will require the most careful watching as to detail, from the fact that this Act, once passed, will define the law. Twenty-two Acts of Parliament are wholly or partly repealed by it; and every clause of the present Act will be taken as a substantially new enactment, even where it may be actually copied from previous Acts. It is not, therefore, a duty so much to discuss the principle, or to describe the details, of the new measure, as it is to watch the careful editing of clause by clause.

The Act is clearly divided into eleven parts. The first gives the short title, "Public Health Act, 1875"; limits the operation of the measure by the exclusion of Scotland, Ireland, and the metropolis; and gives definition of the terms used.

Part II. deals with the constitution of districts and authorities; the various Acts from which the now-consolidated provisions are taken, being indicated in the margin of each clause.

Part III. contains sanitary provisions and regulations as to sewers and drains. We note the insertion here, paragraph 20, of a provision from the Public Health Act of 1848, as follows:—"An Urban Authority may, if they think fit, provide a map exhibiting a system of sewerage for effectually draining their district, and any such map shall be kept at their office, and shall at all reasonable times be open to the inspection of the ratepayers of their district." This clause, in its actual form, appears to be purely obstructive. It leaves it to the discretion of the authorities whether they should take a step indispensable to the efficient discharge of their duty; and then locks up the map, if they like to make it. We should propose to strike out the words "if they think fit," to substitute "shall" for "may," and to insert the words "a copy of" before "any such map."

Provisions as to water supply and regulation of cellar-dwellings and lodging-houses; definitions of nuisances; powers and duties of authorities with respect to them; offensive trades; unsound meat; infectious diseases and hospitals; prevention of epidemic diseases; and mortuaries; form the subjects of separate divisions of this part of the Act.

Part IV. contains Local Government provisions. The sections regard highways and streets; public pleasure-grounds; markets and slaughter-houses; public halls; and police regulations; the latter being only stated to be certain provisions of 10 and 11 Victoria, c. 89.

Part V. contains general provisions. These regard contracts; purchase of land; arbitration; bye-laws; and officers and conduct of business of local authorities. It is provided by clause 184 that the medical officer of health shall be a legally qualified medical practitioner, and the power of the Local Government Board to satisfy itself on this point is confirmed. No similar provisions are made as to the surveyor. In this part of the existing legislation lies the canker of the whole system,—namely, in the fact that the officers of health are absolutely subjected to the local authorities who appoint them, and, as such, are deprived of any power of combined or independent action.

Part VI. deals with rating and borrowing powers, and audit of accounts. Part VII. prescribes the order of legal proceedings. Part VIII. is headed "Alteration of Areas and Union of Districts." Certain powers are here attributed to the Local Government Board. There are two very serious blots in this part of the Act. One is,—that no reference to the physical conformation of the country, and the actual existence, in point of fact, of natural water-shed districts, is made. On the contrary, there is a vague power of executing works, with consent, in other districts; which shows that the parochial, not the physical, demarcation of districts is alone contemplated by the Act. The other defect springs from the same cause, the absolute ignoring of physical science. Districts may be united for appointing a medical officer of health; nothing is said as to the union of districts for appointing a surveyor.

Part IX. defines the powers and duties of the Local Government Board. It is to be regretted that the duty of giving full and prompt information to the public at large, and to any consulting authorities in especial, as to the general principles of the sanitary works demanded by each district, and the outcome of experience, is not here prominently enforced. A large and constant outlay is entailed on every district, by the want of a small central outlay in collecting, tabulating, and publishing the valuable *data* collected, or which ought to be collected, by the inspecting engineers of the Local Government Board.

Part X. contains miscellaneous and temporary provisions.

Part XI. saving clauses and repeal of Acts.

Five schedules are annexed to the Bill. Schedule 1 contains rules as to meetings and proceedings. Schedule 2, rules for election of local Boards. Schedule 3, rules as to resolutions of owners and ratepayers. Schedule 4, various forms. Schedule 5, enactments repealed or affected by the measure. The Bill contains 156 pages, and its weight is between 21 and 22 oz.

GOLDWORK AND ARCHITECTURE: A NOTE OF INTERROGATION.

WE can scarcely allow the views on the origin of architecture which were delivered by Mr. Skidmore the other day at the Architectural Museum, in a lecture reported in our columns (p. 246, *ante*) to pass without a word of question. The theories of the past of architecture, and of the possible basis for its future, are so numerous just at present, as to become rather bewildering. The theory which builds the development of architectural ornament on the forms of goldsmith's work, whatever effect these may have had in certain instances, can however scarcely be accepted by any unprejudiced student, though the influence of the one art on the other may be more than is generally supposed. But no one who has compared Greek gold work with the decorative features of the Parthenon (apart from the sculpture) would be prepared, we fancy, to connect the two so closely, or to regard the triglyphs and guttæ as imitations of gold work; nor would the case be better for Mr. Skidmore in regard to the early and best Gothic. In spite of his claim, we can see no affinity between the early transitional capital and its broadly sculptured leaves and bosses, and the productions of beaten gold. A certain resemblance there is between the foliage of the late Decorated period and the effect of *repoussé* metal-work, but not to the extent of proving any necessary connexion between them. As to the early Transitional carving, both in France and England, we know of no class of ornament which shows more evident traces of having been elaborated in accordance with the true perception of the nature and capability of stone as a material for carved ornament; and any resemblance between that and earlier gold-work, if existing, must be mainly imaginary. While doing justice to the apparent interest and ability of the lecture in question, we cannot help being somewhat amused at the very partial views of the lecturer. Mr. Skidmore has made fame and (we hope) fortune in connexion with art-work in metal, and by consequence (apparently) he is disposed to lay down that everything arose out of metal. This is stretching the principle of "nothing like leather" a little further than it will bear.

COMBINED BACK DRAINAGE.

THE SHAFTESBURY PARK ESTATE.

THE dispute between the Artisans and Labourers' Dwellings Company and the Wandsworth District Board of Works as to the drainage of the houses on the Shaftesbury Park Estate at Battersea, and which led to the Company giving notice of their intention to apply to Parliament for an Act sanctioning their system of drainage, has just been settled. It may be stated that the company are adopting throughout the whole of their estates the mode of drainage known as the system of combined back drainage, which they state they are carrying out in accordance with the opinion and advice of eminent sanitary authorities. The advantages claimed for the system are, first, that no effluvium from the drains can arise into the houses, as they state is the case when the ordinary mode is adopted and the drains are carried under each house. Secondly, that the back drains are easily repaired without any disturbance of the floors of the dwelling-houses; and, thirdly, that ventilating shafts are fixed from the drains to the tops of houses, whereby the gas is carried off. The Wandsworth Board of Works would not sanction this system of drainage, on the ground that it was contrary to the provisions of the Metropolis Management Act, and hence the application of the company for Parliamentary sanction to their system.

At the meeting of the Wandsworth Board last week, the chairman stated that at a consultation with the solicitor of the Artisans and Labourers' Dwellings Company, which lasted two hours, it was finally agreed that the company's Bill should be withdrawn; and that unrestricted access over the front and back drains should be given to the officers of the Board. The company are to be permitted to continue their system of combined back drainage, and in carrying out the matter the Board have undertaken to assist the company as far as they can. The dispute involved the re-draining of 800 houses which the company had erected on the estate, and which the Board required to be drained in strict compliance with the Metropolis Management Act. The settlement which has been arrived at between the parties has prevented this outlay.

Some years ago combined back drainage was insisted on by the Metropolitan Commissioners of Sewers, at the time when Mr. E. Chadwick was in authority. The chief objection to it is the extent to which each occupier may be inconvenienced by the act of a neighbour.

The Indian Museum.—In the House of Commons last week, in reply to Mr. Fawcett, Lord G. Hamilton said it was in 1874 determined to remove the museum for three years to South Kensington, rather than incur the expense of erecting a new building. This, however, was only a temporary arrangement for three years. As soon as any permanent decision was arrived at, he should be very glad to give any papers or minutes written by Members of Council, but he did not think at present it would be advisable, pending such decision, to lay papers upon the table of the House necessarily inadequate and incomplete.

ANCIENT AND MODERN RESIDENCES OF THE RUSSIAN CZARS.

THERE is not a single Russian historian who has left us a complete record of the ancient habitations of the Russian people, a description which could be taken as a full digest of all the information on that subject. The old chroniclers had not in view our curiosity, and did not take the least interest in the contemporary domestic life, for the sole reason probably that the subject was familiar to them, so well known to everybody that they did not deem it worth while recording. The materials for the history of the Russian architecture of ancient times consist of scattered and incidental references; but meagre as they are, we are able to supplement these piecemeal accounts by trustworthy information of a later date. This is all the more easy, since the ancient mode of life of the Russian people, especially with regard to their domestic economy, was not so easily influenced by the foreign element, it experienced very little change. It must be universally admitted, we think, that the peasant's home of the present day of Great Russia is constructed just as it was perhaps 300, 400, or even 1,000 years ago. Besides, anterior to the reign of Peter the Great, among the entire population of the country of Muscovy, there was little difference in the mode of life or the customs, so that the architecture of all classes was distinguished for its similarity all over the country, and which has lasted down to the present day in every village of Great Russia. The original, most ancient Russian dwelling was undoubtedly the *kleit*, a very simple wooden structure which has lasted even down to our days. At the beginning it was built, very likely, simply with a hearth in the middle, around which the inmates warmed themselves; but as soon as the *kleit* began to be heated by means of a *paitch*, or Russian stove, it assumed the name of *istopka*, from the words *topit iztopit*, to heat, to light a fire, from which, in course of time, was formed the word *izba*, which is at the present time almost the only dwelling of the Russian peasant. The *izba* and *kleit* formed, so to say, the foundation of his dwelling. The former was generally constructed with windows or openings just under the ceiling, which were used for the passage of the smoke. They were more like great chinks than windows, and were opened and closed by means of a sliding shutter within. Some of the *izbas* had wooden chimneys, which are met with sometimes even now. With well-to-do people, or inmates with large families, there used to be constructed opposite to the *izba*, a kind of summer-room, also called a *kleit*, without a stove, likewise with sliding shutters. This was connected by a covered passage, and reached by a few steps at the end of it. The *kleit* was therefore built higher than the *izba* proper, the space underneath being reserved for small cattle, &c., or it was used as a storeroom. This is the dwelling of the common man in Russia. We need not go into the details of the peasant's *izba* and *kleit*, and the various appurtenances of the peasant's house, because all this has remained unchanged from time immemorial. Persons belonging to the higher classes, rich foreign merchants, boyars, &c., lived in *kharomas*,—great wooden edifices, the construction and arrangement of which were changed according to the requirements of the proprietors, although in their main features they retained the primitive type of the *izba* and *kleit* of the common people, the only difference being, that the smoke issued through a chimney, while in the other it escaped through the door or the openings near the ceiling. They were generally built two stories high, the top floor having regular windows in front with jambs, and at the sides and back the openings with sliding shutters. Besides, the top room differed from the *izba* in the stove, which was built up of glazed tiles, of round or square shape, like a Dutch stove, quite distinct from the *izba* stove, which is like a baker's oven, the top of which the peasant uses as a sleeping-place in winter. The rooms were not unfrequently divided by partitions into separate chambers. The ground-floor, if it may be so called, was used for various purposes,—servants' rooms, store-rooms, &c. In the first case they were made with sliding shutters; in the second, they were closed all round, without either door or window, as the entrance to them was inside from the top floor. A roomy covered passage joined the top-room floor, with the second story of another part of the building similarly constructed to the one just described, with a ground-floor which was used for the same purposes. This top floor was built with a log ceiling. Besides these rooms, there were in the ancient *kharomas* the *svetlitsa* (the light chamber) and the *sennik*. The former was a room with real windows with large size, of which there were a greater number than in the other rooms; sometimes they were made in all the four sides. The *svetlitsa* was without a stove; the *sennik* was constructed in the same manner, and served as a bedroom in the summer time. These two rooms were distinguished from the others in this, that no earth was placed over the log or boarded ceiling, as was the case with the warm rooms. For this reason the *sennik* was deemed of great importance during the ancient wedding ceremonies. In it was usually arranged the nuptial bed; and the ancient customs did not admit of earth being over the heads of newly-married couples, as being such a thing which, amid the rejoicings on the auspicious occasion, might remind them of the grave; at least, this is the way Collins, who visited Moscow in the reign of Alexay Mikhailovich, explains this ancient custom. The top story had sometimes a kind of open attic window under the roof of the main building; they were open on all sides so as to command an extensive view all round. To these were added sometimes small towers, which frequently had large windows on the four sides, which were used for viewing the surrounding scenery. Thus some of the ancient *kharomas* of Russia were sometimes built three or more stories high. It should be remarked that in the large *kharomas* the disposition of the several parts was not subject to any general plan. They used to be placed indiscriminately, according to the convenience, various requirements, and fancy of the proprietor. These were the general characteristics of ancient Russian structures in old Muscovy. The same peculiarities of construction, only on a much larger scale, characterised also the *kharomas* of the reigning Grand Dukes of ancient Russia. They contained besides the rooms mentioned, two other apartments, the *gridnitsa* and *bozhnitsa*. It was in the *gridnitsa* that the great Vladimir gave on Sundays feasts to her ministers: consequently it served as a kind of reception or drawing room, and was the largest apartment in the Grand Duke's court. The *bozhnitsa* was the ancient private chapel of the Grand Dukes, and was usually built on one of the upper floors. The Grand Duke's court did not consist of one single building, but was formed of numerous separate *kharomas* which were joined together by open and covered passages, and were approached from verandahs outside. The lower stories were reserved for the servants, and generally speaking the retinue of the Grand Dukes, which was very numerous. Among the offices incidentally mentioned by the old historians is the ice cellar and the mead-cellar. Some of the ancient palaces, owing to their splendid appearance, or perhaps on account of the surrounding scenery, were called "the beautiful *kharomas*," and the court of Duke Youry Dalgorouky, beyond the Dnieper, went even by the name of "Paradise." As to the outward appearance of these ancient structures, mention is made in one of the ancient poems of the golden-roofed attics of Sviatoslav, the Duke of Kief. This short account is all that we can glean from the old Russian chronicles of the tenth, eleventh, and twelfth centuries concerning the most ancient residences of the reigning Grand Dukes of Russia. If we do not know for certain, although we may hazard a guess as to the manner in which the apartments of the first sovereigns of the house of Ruric were decorated and furnished anterior to the sixteenth century, we at least know for certain that in the reign of the house of Romanof the walls of the Czar's apartments were usually hung with silk material, which was put on smooth, with valences in the proper places in the Eastern fashion. The custom of covering the floors of dwellings with rich carpets is a very ancient one which has tended since pre-historic times to develop the art of weaving carpets, which in the remotest antiquity were used for covering the floors of tents. From the floor the figured material was transferred to the walls; earlier still was adopted in the shape of figured borders to the entrance curtains which used to be pinned up in a slanting direction at the sides. The Eastern custom of a luxurious arrangement of tents was transmitted during the crusades even to the North-West of Europe. But as regards Russia, into which country civilisation and the requirements of comfort in the arrangement of the apartments of dwellings were introduced, owing to her commercial relations with luxurious and more civilised nations,—the Byzantine Empire and the Caliphate, so their customs and their notions of beauty, and, consequently, the art of luxurious decoration, were transmitted to Russia much earlier than the West of Europe. It should be remarked, however, that both the Byzantines and Arabs in decorating the interior of their stone buildings used not only carpets but mosaic work, gilding, carving, and painting, while in Russia, during the first age of civilisation, the wooden structures—the *kharomas*—were decorated only with carvings rudely painted in glaring colours, and with coloured stuffs. The material generally used for covering the walls of the palace rooms in the sixteenth and seventeenth centuries was red cloth and other suitable colours. Sometimes a chequered pattern was effected, consisting of two colours in squares (18 in. by 18 in.), red alternating with blue; sometimes the pattern was of a triangular shape, also in two bright colours, red and green. Even the ceilings of the rooms were upholstered with silk, as was the case in 1691 in the apartments of the Tsaritsa Natalia Kirilovna, which of course presents a direct contrast to the custom of the West, where the silk material on the walls demanded a painted ceiling. In the time of the ancestors of Peter the Great the imitation of the West in decoration and general arrangement of the apartments of the rich, particularly in the sixteenth century, was limited only to the doors, which were covered with Venetian leather, embossed in gold, which for some purpose or other used to be varnished, which increased the brightness of the raised design. The art of the upholsterer, however, was not limited alone to the walls and ceilings, but was applied to the making of quilted cushions for covering the benches or seats, and mattresses stuffed with cotton wool, and quilted in a chequered pattern, and which were sometimes made of morocco leather. The doors and windows required quilted or damask curtains, draperies which extended over the whole width of the wall, and which were drawn not only over one window, but the whole of the windows at once. For the winter, the curtains were also sometimes wadded and quilted to keep out the cold and wind. The curtains were trimmed at the top with furbelows of another material gathered in puffings, and forming graceful folds. The walls of the palace apartments were also draped in the same manner with costly silks, especially on festive occasions, such as coronations, weddings, the reception of ambassadors, &c. The material for this purpose was mostly velvet cloth, thickly embroidered with gold. The seats on these occasions were also covered with Persian carpets of rich design, and the top of the backs of the seats with carpets of cloth of gold.

But now an event occurs which changes everything in connexion with the domestic life of the Russians of the upper classes. Peter I., the great reformer and regenerator of Russia, is on the scene. In 1703 he lays with his own hands upon a little island the first stone of the foundation of the citadel, and when the defences are completed, commences building the city which he had already called St. Petersburg. His own house, a small wooden building containing two chambers and a kitchen, one or two houses of the same size, and the miserable hovels of many thousand labourers, constitute the new capital at the end of 1703. In a short time appeared the Ukazes, in which are manifested the exertions and intentions of the Czar. By one of these 350 noble families were ordered to establish themselves in the new capital, and to build houses in the places indicated by the sovereign. By another the merchants and mechanics were obliged to build three hundred houses. By another every ship arriving in the harbour was to bring a certain quantity of stone, according to her size and tonnage. Architects, artisans, and engineers were invited from every country in Europe, and the same measures and activity employed as marked the progress of Constantinople under Constantine the Great. The first humble residence of Peter the Great and Catharine his wife still stands upon the spot on which it was erected, and from its threshold may now be seen the immense palaces and stately structures of the city which occupies the site of the former morass. The transfer of the capital from Moscow to St. Petersburg caused a great revolution in the architecture of Russia, which called forth corresponding changes in the interior arrangement of the new dwellings. Peter the Great introduced the tastes of the West into his new capital, and a most minute imitation of

Western originals in everything pertaining to social life. The new order of things gave a great impetus to the trades connected with the interior decoration of the dwellings of the rich: it demanded the introduction of rich draperies, curtains, soft chairs, easy-chairs, sofas, &c., things which were quite unknown in ancient Muscovy; from that time the ancient capital also assumed in all these matters the fashion established at St. Petersburg. In the reign of Peter the Great direct commercial relations were established with China, and the consequence was the introduction of rich Chinese figured silks with which Menshikof, the Czar's favourite, loved to decorate the apartments of his sumptuous Petersburg palaces, which, until the building of the second Winter Palace, which was not quite completed until Catharine I. mounted the throne, served as audience chambers for the reception of ambassadors, and for other solemn occasions.

Together with silk materials, articles of Chinese ingenuity, such as ornaments, articles of *vertu*, &c., the luxury of Peter the Great's time necessitated also the introduction of Gobelin tapestry, the cunning handiwork of French artisans, who came to Russia with their *haute* Lisse and *basse* Lisse looms from the banks of the Seine to the dreary islands of the Neva, where Western civilisation had only just begun to dawn. The establishment of a tapestry factory at St. Petersburg, in 1716, is a very important event for the decorative art in Russia, for just at that time a number of Russians had been sent by Peter the Great to France and Holland to learn everything appertaining to interior decoration of the upholstery art and cabinet-work. These young men were called *pensionnaires* of the Emperor, and on their return were personally examined by the Czar as to their proficiency; having acquitted themselves in the best manner, they were appointed to the Admiralty as decorators and upholsterers of ships' cabins, and in the same capacity to the Imperial apartments of the Court. These artisans received a fixed salary: besides the pay for the work, the former emolument was paid on condition of teaching the art to the Government apprentices; and as a further encouragement, a reward was appointed when the apprentice became proficient. At the same time it depended entirely on the arstian to refuse an apprentice when he found him unsuited to the business. Owing to such measures were formed the Russian artisans in every branch of the decorative art.

As we stated above, the manufacture of Gobelins was undertaken by French artisans, who were engaged by the Architect-General, Le Blond. In November, 1716, the factory was opened in the houses of the French quarter of the Vasilyefsky island, and shortly afterwards some tapestries were produced representing flowers and fruit and a portrait of Peter the Great at the battle of Poltava, from the original of Tannauer (1718), as it appears from a petition of that artist to the Czar. The tapestries manufactured at this factory were employed, at the suggestion of Le Blond, in decorating the apartments of the Peterhof palaces, in the vicinity of St. Petersburg. The Gobelins constituted in reality the most luxurious decoration for rich saloons, combining in themselves all the elements of exquisite taste, an exact reproduction of painting, with light and shade in the proper places, for which the materials, wool and silk, were eminently suitable, the form completely subject to the conceptions and plans of the architect and durability, which left the most delicate shades of colouring intact in their pristine freshness for a long time. The Russian architects of the period knew how to estimate these qualities, and knew how to apply these tapestries to the best advantage, exhibiting in the best light their most brilliant parts on every convenient occasion, during the whole of the eighteenth century, thanks to a whole school of Russian artisans formed by the French immigrants, and who have lived to our own days.

The work of Russian upholsterers and decorators manifested itself in a most brilliant way in the reign of Peter I. in triumphal arches, erections which necessitated much carving, gilding, and required curtains and drapery, with valences, trimmings, &c. The Empress Catharine I., wife of Peter the Great, who succeeded him to the throne, with Menshikof at the head of affairs, supported the splendour of the empire. Her reign, and that of her successor, Peter II., are conspicuous for the magnificence of coronation fêtes.

Anne, the niece of Peter the Great, in her domestic policy, followed out the plans of her uncle. Owing to her long residence in Courland, when duchess, the tastes of the Empress were comparatively refined, and under her auspices the upholstery and decorative art continued to flourish, splendid specimens of which were to be seen inside the Ouspensky Cathedral and the Gránovitaya Palata at Moscow. She delighted in magnificence, and perhaps exceeded any other contemporary in the splendour of her spectacles. The memoirs of the time make special mention of a ball in the depth of a Russian winter (January, 1734), when the apartments were decorated with rows of blooming myrtles and orange-trees in blossom, the seats were covered with fresh turf, and were placed under green and flowery arbours, so that it appeared as if the summer scenery of a southern clime had been suddenly transplanted by the wand of the enchanter and set down among the snows of a northern winter. Here may be mentioned a curious fancy of the Empress,—a strange piece of architecture,—an ice palace. To punish one of the Galitzins who had incurred her displeasure, she caused him to be married to a woman of low birth. This occurred in the severe winter of 1740. She had a house built wholly of ice for the accommodation of the couple, and all the furniture, even to the nuptial bedstead, was of the same cold material. Cannon constructed of it were placed in front of the building and fired several times.

Elizabeth, the next empress, was particularly noted for her love of sumptuous decoration and luxuriousness. Under the guidance of the talented Count Rastrelli, the noted architect, the Russian upholsterers and decorators performed wonders, according to the testimony of Frenchmen themselves. They compared the decorations of the Tsarskoye Selo Palace with Versailles, making deductions disparaging even to the residence of the *grand monarque* himself. This was the period in Russia of the highest school of decorative art, especially as applied to furniture and upholstery. In the new Academy of Arts a special department had been formed for learning the art of decorating palaces. The reign of Catharine II., the next sovereign, was one of the most brilliant and successful that Russia has witnessed. Her own ordinary expenditure, with the outlay on triumphal arches and imperial entertainments, was enormous. She built palaces wholesale, presenting not a few of them to her favourites. She added the Hermitage to the splendid Winter Palace, a series of apartments with its famous winter garden, in which she forgot the cares of State in conversation with her wits and beaux. The Imperial residence of Tsarskoye Selo was extended and with additional magnificence, so that it exceeded in beauty and splendour all the contemporary royal residences of Europe. It is quite impossible to convey a proper idea of the immense sums that have been lavished upon this Imperial habitation. The exterior walls were actually gilded, and cost thousands upon thousands of pounds. There were rooms completely covered with gold, walls and ceilings of glass and amber, floors of ebony and mother of pearl. The vast saloons still retain the evidence of the boundless wealth and extravagance of the second Catharine. It was in these saloons that Catharine, attended by a host of brilliant retainers, loved to receive ambassadors and foreign potentates and astonish the princes of the East with untold splendour. In the reign of Catharine II., with the further development of various trades, especially of the branches of cabinet-making, carving, ornamental moulding, the decorative art flourished; the Moscow factories were likewise able to produce splendid specimens of stuffs used for decorating apartments and covering furniture; and the manufacture of bronzes received likewise an impetus. By means of these elements, and the architect's knowledge of the manner of employing them to the best advantage and the concurrence of favourable circumstances, generally speaking, when the court and the nobles vied with each other in the taste displayed in the decoration of the interior of their dwellings, the age of Catharine II. may be said to exhibit the highest manifestation of taste in this regard. The winter palace, with its series of saloons and halls, where masquerades were constantly given, served as a school for the artisan in almost every branch of decorative art; besides the wealthy nobles residing at St. Petersburg displayed the extravagance and splendour of petty sovereigns. Their palaces were filled with the most costly ornaments and the most luxurious furniture. Jasper and porphyry adorned the walls, columns and pilasters of malachite supported the sculptured ceilings. Cabinet-makers, upholsterers, and decorators were in constant requisition for refitting, with additional magnificence, these sumptuous abodes. Apartments with fretted roofs, tesselated pavements, hung with cloths of gold, and adorned with furniture in ormolu, and every kind of ornament, opened one into another. Ball-room, card-room, picture-gallery, library, museum, conservatory of exotic plants, alcoves with fountains and statuary, the quiet parlour with a carpet and a cozy fire blazing upon the hearth, all this must have indeed afforded a contrast to the "beautiful kharomas" of ancient Russia, to the golden-roofed towers of Sviatoslaf, the Duke of Kief, or even to the "paradise" of Youri Dolgoronky beyond the Dnieper. During the reign of Catharine II., at the head of the administration of all the factories for manufacturing the materials used for decoration were the pupils of the Academy of Arts, the best designers in Russia. With the beginning of the present century things changed for the worse, the designers had become old, and there were no competent Russian artists to follow them. Then came the war with Napoleon, which destroyed the manufacturing establishments of Moscow, and gave a final blow to the development of native artisan-artists.

The greater part of the establishments formed by the Government with the view of promoting the decorative art had ceased to exist, the absence of demand inseparable from the convulsed state of the country engaged in repelling the enemy put a stop to production, and, among other trades, that of upholstery and decorating suffered perhaps the most. Paul I., while building the Mikhailofsky Palace, engaged a number of foreign artisans, but owing to the death of the czar they were unable to complete what they had undertaken, and were forced to remain in Russia. The court in which the French taste and the sumptuousness of the first empire found secure refuge supported the artisans invited by Paul during the first years of the reign of Alexander I. These new-comers in the mean time took part in the general enthusiasm of a new order of things, where rude decorativeness presented the most salient features to the detriment of artistic execution. This, by the way, is already perceptible in the palaces and other monumental structures of the second half of the reign of Alexander II. The unartistic taste of the first empire continued to prevail which had held the first place and undisputed possession for half a century. It was in the reign of Nicholas I. that there appeared at St. Petersburg numerous foreign firms with Russian workmen, over whom were managers who frequently knew their business only very superficially. The natural result of all this was a slavish imitation of the ready-made foreign designs in conceptions of fashion, and not at all in the production of anything original as regards taste and style: this has continued to the present day. Technical perfection under these circumstances may still be retained, but the suitableness of form to local requirements will naturally still be wanting. Exertions, however, are now being made in Russia to obviate this state of things. The Strogonoff School of Design has been formed where young men are educated in every branch of decorative art, and where national forms in artistic decoration are mainly studied.

It may be interesting to enumerate the palaces which have been constructed in the capital and its vicinity since Peter the Great first built his little two-roomed house on the banks of the Neva:—

The Winter Palace,

officially called the head-quarters of his Imperial Majesty the Emperor.

On the site of the present Winter Palace, on the banks of the Neva, was, in the reign of Peter the Great, the house of the High Admiral, Count Apraxin. At the death of the latter it passed to Peter II. After her coronation, the Empress Anne took up her abode in the Apraxin mansion, but finding it too small for her numerous retinue, caused it to be pulled down in 1724, and entrusted the new building to the Italian architect, Rastrelli. The Winter Palace, however, was not finished until 1762, in the reign of Catharine II. In December, 1837, it was destroyed by fire, but reconstructed two years afterwards by the Emperor Nicholas. The Winter Palace, as is well known, contains some of the most magnificent saloons in Europe. We need not enter into particulars, as they have been minutely described by special correspondents, and illustrated by

artists on the occasion of the marriage of the Duke of Edinburgh with her Imperial Highness the Grand Duchess Marie of Russia.

Residences of the Members of the Imperial Family.

The Anitchkof Palace, the residence of the Cesarevich in the Nefsky Perspective; the Mikhailofsky Palace, the residence of the Grand Duchess Helen, aunt of the Emperor; the Marble Palace, on the Neva, the residence of the Grand Duke Constantine, brother of the Emperor; the Palace of the Grand Duke Nicholas, another brother of the Emperor, on the Neva; the Palace of the Grand Duke Michael, youngest brother of the Emperor, on the Neva; the Palace of the Grand Duchess Marie, sister of the Emperor, near the St. Isaac's Cathedral; the Palace of the Prince of Oldenburg, cousin of the Emperor.

Suburban Residences.

The Yelagin Palace, on the Yelagin Island, residence of the Emperor and Empress; Palace of the Grand Duchess Helen, on the Kamennoy Island; Palace of the Prince of Oldenburg; the Taurida Palace, a kind of Hampton Court; Peter the Great's old Palaces, on the Petroffsky Island, and at Ekateringoff, about four in number.

Country Residences.

Tsarskoye Selo, the favourite residence of the Emperor and Empress, about 17 miles from the capital, and Pavlovsky, close to the latter, containing several palaces for the accommodation of the various members of the Imperial family; Peterhoff, the residence of the Emperor and Empress, situated on the Gulf of Finland, about 17 miles from St. Petersburg, contains a number of separate palaces, old and new, extending with their parks and gardens for several miles, some of them dating from the time of Peter the Great.

Then come the palaces of the various members of the Imperial family, enumerated above in Peterhoff, and the vicinity of it, numbering some ten different establishments. Then there is the palace at Gatchino, the Emperor's hunting-seat, and the old Palace of Ropsha, in the vicinity of the capital. The Emperor has, besides a palace in Livadia, on the south coast of the Crimea, two splendid ones in the Kremlin, at Moscow, and one at Warsaw. The Grand Duke Michael, who is Viceroy of the Caucasus, has a palace at Tiflis and a country seat.

ROUND PRIMROSE HILL.

WHEN the Roman settlers planted their colony on the banks of the Thames, and founded London, most part of the district to the north consisted of a large forest filled with wolves and other wild animals. In the year 1218 the Forest of Middlesex was disafforested, but although portions were cleared, St. John's Wood continued as late as Queen Elizabeth's reign to be sufficiently dense for Babington and two of his fellow conspirators to succeed in concealing themselves from the Dogberrys of Lord Burleigh. At the same time, however, Primrose-hill and its neighbourhood were used as meadow land, and Nash the author addresses Kemp the actor in these terms:—"Brother Kemp, as many alhailes to thy person as there be haicockes in July at Pancredge." The history of this district dates back to very early times, if we may accept the name of Barrow-hill as evidence that it was once the scene of a battle and place of sepulture for the slain. There was formerly a Barrow Farm, and Barrow-hill is occupied by the reservoir of the West Middlesex Waterworks, but the name survives in Barrow-hill place and road. The definite history of the place dates from the time when "Sundry devout men of London" gave to the Leper Hospital of St. James (afterwards St. James's Palace) four hides of land in the field of Westminster, and eighty acres of land and wood in Hendon, *Chalcot*, and Hampstead. Edward I. confirmed these gifts, but in course of time dissensions arose between the convent and the Abbey of Westminster, which Henry VI. put an end to by giving the custody of the hospital into the hands of the Provost and Fellows of his newly-founded college of Eton, and with it the before-mentioned acres. In the twenty-third year of Henry VIII.'s reign, the hospital was surrendered to the king, who turned it into a manor-house. The property of Chalcot and its neighbourhood was probably of little value, and no doubt the Eton authorities had not much difficulty in getting it into their own hands again. Were they far-seeing enough to look forward to the day when its nearness to the capital would make the land valuable?

More than two centuries pass away, farm-houses are built, and the manor of Chalcot is divided into Upper and Lower, which are described as the Chalcots, but history takes no note of the place. However, in October, 1678, the eyes of all England are directed towards Primrose-hill, for there has been discovered the dead body of Sir Edmund Berry Godfrey, and the nation is wild with fear of the Popish Plot. The hill was famous for the primroses that grew upon it, and Barrow-hill, close by, was also called Greenberry-hill. Although the fields around were used for grazing, this place, covered as it was with brambles, was very inaccessible, and wonder was excited as to the means by which the body came there. Explanation was required, and false witnesses arose to supply it. Before we come, however, to the trial of the supposed murderers, it will be well to say somewhat about Sir Edmund Berry Godfrey himself; and, as Macaulay, in common with many others, calls him Edmundsbury, we will commence with his name. The first authority for the form we have used is to be found on the monument in the cloister of Westminster Abbey to the memory of a brother of Sir Edmund, where the knight is designated as Edmundus Berry Godfrey, but the late Mr. J. G. Nichols brought forward a still higher authority, viz., Sir Edmund's father. The following is an extract from the diary of Thomas Godfrey, of Lidd, Kent,—"My wif was delivered of another son the 23rd December, 1621, who was christened the 13th January, being Sunday. His godfathers were my cousin, John Berrie, his other godfather my faithful loving friend and my neighbour sometime in Grub-street, Mr. Edmund Harrison, the king's embroiderer. . . . . They named my son Edmund Berrie, the one's name, and the other's Christian name." The confusion has arisen partly from the likeness of the name to that of the celebrated town in Suffolk, and partly from the infrequent use at that time of two Christian names. Sir Edmund was a wealthy timber merchant, and lived at the river end of Northumberland-street, in the Strand. He was Justice of the Peace for the Court quarter of town, and was so active in the performance of his duties, that during the time of the Great Plague, in 1664–5, upon the refusal of his men to enter a pest-house in order to bring out a culprit who had furnished a large number of shops with at least 1,000 winding-sheets stolen from the dead, he ventured in alone and brought the wretch to justice. He was knighted for his conduct during the Plague, and Bishop Burnet says that he was esteemed the best Justice of the Peace in England. At the time of his death he was entering upon the great design of taking up all beggars, and putting them to work. He was a zealous Protestant and Church of England man, but was not forward to execute the laws against Nonconformists, nor to search for priests or "mass-houses," still he got mixed up in the Popish plot. He grew apprehensive and reserved, and told Burnet that he believed he should be knocked on the head, yet he took no care of himself and went about alone. One day he was seen, about one o'clock, near St. Clement's Church, and then never heard of again until his body was found in a ditch on the south side of Primrose-hill. The body was taken to the White House, or Lower Chalcot farm-house, where it lay for two days, and was seen by large multitudes. Burnet was one of those who went to the White House, and he describes what he saw as follows:—"His sword was thrust through him; but no blood was on his clothes or about him. His shoes were clean. His money was in his pocket, but nothing was about his neck, and a mark was round it an inch broad, which showed how he was strangled. His breast was likewise all over marked with bruises, and his neck was broken. There were many drops of white waxlights on his breeches, which he never used himself; and since only persons of quality or priests use those lights, this made all people conclude in whose hands he must have been." Four medals were struck to commemorate his death, on one of which he was represented as walking with a broken neck and a sword in his body. On the reverse of this medal St. Denis is shown bearing his head in his hand. Underneath is the following inscription:—

"Godfrey walks up hill after he was dead;
Denis walks down hill carrying his head."

A great procession, consisting of eight knights, all the aldermen of the City of London, and seventy-two clergymen, accompanied the body to the grave in St. Martin's Church, and a portrait of Sir Edmund was placed in the vestry-room. The press now teemed with pamphlets, reports, trials, &c.; in one the murder was charged to the Earl of Danby; in another, Garnet's ghost addressing the Jesuits is made to show the greatest delight in the horrors of the plot. Wishes are expressed,—

"That the whole nation with one neck might grow,
To be slic'd off, and you to give the blow."

The nation, driven mad by such vile trash, thirsted for revenge, and Miles Prance fixed upon Somerset House, the residence of Charles II.'s queen, as the scene of the murder. Three persons, viz., Robert Green, cushion-man to the Queen's Chapel; Lawrence Hill, servant to Dr. Godden, treasurer of the chapel; and Henry Berry, porter at Somerset House, were tried for the crime on the 10th of February, 1679, when the infamous witnesses Oates, Prance, and Bedloe declared "that he (Godfrey) was waylaid, and inveigled into the Palace, under the pretence of keeping the peace between two servants who were fighting in the yard; that he was there strangled, his neck broke, and his own sword run through his body; that he was kept four days before they ventured to remove him; at length his corpse was carried in a Sedan-chair to Soho, and then on a horse to Primrose-hill." In spite of the abandoned character of the witnesses and the irreconcilable testimony they gave, the jury found all the prisoners guilty, and Lord Chief Justice Scroggs said he should have found the same verdict had he been one of jury. The three men, all declaring their innocence to the last, were executed, and the law had its victims; but from that day to this the murder of Godfrey has remained an unsolved mystery. It was pointed out in a printed letter to Prance, 1681, that his story of Hill carrying the body before him on horseback could not be true on account of the condition of the district. "As to the place, it was a ditch on the south side of Primrose-hill, surrounded by divers closes, fenced with high mounds and ditches; no road near, only some deep, dirty lanes not coming near 500 yards of the place, and impossible for any man on horseback, with a dead corpse before him, at midnight to approach, unless gaps were made in the mounds, as the constable and his assistants found from experience when they came on horseback thither." It has been a popular belief that the name of Greenberry-hill took its origin from the names of the three supposed murderers, but this was not so; and Narcissus Luttrell, in his contemporary *Diary*, remarks on the singular coincidence of the names of Green, Berry, and Hill with the old designation of the hill.

Burnet describes the place as "about a mile out of town, near St. Pancras Church." A more accurate description would have been,—"The fields between Tottenham Court and Belsize," but although now that a wilderness of houses has grown up between St. Pancras and Primrose-hill, we do not look upon them as near together, yet in Burnet's time and long after, the church was the only landmark of importance in the neighbourhood. As late as the year 1777, St. Pancras old church was so rural that it was only inclosed by a low and very old hand railing, which in some parts was entirely covered with docks and nettles. Whitfield's Chapel in Tottenham-court-road; Montague House, Great Russell-street; Bedford House, Bloomsbury-square; and Baltimore House situated where Russell-square is now built, could all be seen from the churchyard.

By this time the White House had become a tavern and tea-gardens for the benefit of ruralisers, and was known as Chalk Farm. This name is a corruption from Chalcot, and we see its transitional form in Rocque's map of London (1746), where England's-lane, Haverstock-hill, is marked as Upper Chalk House-lane. What the etymology of Chalcot may be we cannot tell, but there is not a trace of chalk in the neighbourhood, and the whole district rests on London clay.

The next point in the history of Chalk Farm is the commencement of its notoriety as the scene of frequent duels. It was particularly suitable for this purpose, as it was near town, and at the same time quite secluded. Before the Regent's Park was planned, Marylebone-fields were looked upon as country, and few persons strolled as far as Primrose-hill. A notice of the various districts chosen by the duellists would form an interesting chapter in the history of London. When the town was

ill-lighted and worse-guarded, the duellists did not care to go far away. It is true they got into trouble if they crossed swords within the precincts of a Royal palace, but elsewhere they were pretty safe. Henry Jermyn fought a duel in St. James's Fields, and Covent Garden-square was frequently the scene of "affairs of honour." The irascible Dr. Woodward, one of the earliest of geologists, fought a duel with Dr. Mead under the gate of Gresham College. His foot slipped and he fell. "Take your life," exclaimed Mead. "Anything but your physic," replied Woodward. The necessity for leaving the heart of the town was acknowledged when Hyde Park came into favour. The "Field of Forty Footsteps," in the rear of Montague House, called also Long Fields and Southampton Fields, was a frequent resort of duellists. Chalk Farm for some years rivalled in popularity Wimbledon Common, where the Duke of York fought Colonel Lennox in 1789; Battersea Fields, where the Duke of Wellington fought the Earl of Winchelsea, in 1829; and Putney-heath, where Pitt met Tierney, in 1798, and Castlereagh and Canning fought in 1809. One of the earliest duels on record, as having taken place at Chalk Farm, was that between Captain Harvey Aston and Lieutenant Fitzgerald, on June 25th, 1790. Fitzgerald had the first fire, and shot Aston through the neck, who recovered, but was killed in another duel in 1798. On April 6th, 1803, Lieutenant-Colonel Montgomery and Captain Macnamara met near Primrose-hill on account of a quarrel in Hyde Park. Both were wounded, and Colonel Montgomery so seriously that five minutes after he was taken into the Chalk Farm tavern he expired. Captain Macnamara was brought to trial at the Old Bailey, but although the Judge summed up for manslaughter, the jury returned a verdict of "Not Guilty." The next encounter of importance was that between Tom Moore and Francis Jeffrey, which took place in 1806. Fortunately, although the principals were in earnest, the seconds seem to have managed so that the police officers arrived before the signal for firing was given. It was said also that the pistols were only loaded with blank cartridge, and an epigram was written at the time which ended:—

"They only fire ball cartridge at Reviews."

Byron alluded to this report in his "English Bards and Scotch Reviewers":—

"Health to great Jeffrey! Heaven preserve his life,
To flourish on the fertile shores of Fife,
And guard it sacred in its future wars,
Since authors sometimes seek the field of Mars!
Can none remember that eventful day,
That ever glorious, almost fatal, fray,
When Little's leadless pistol met his eye,
And Bow-street myrmidons stood laughing by?"

Moore has written a long account of the affair and describes the spot where the duel took place as "screened on one side by large trees." He also got Byron to add a note to his lines, to the effect that the pistol was actually loaded. A fatal duel was fought near Chalk Farm, on January 13th, 1818, by Theodore O'Callaghan and Lieutenant Bailey; and on February 16th, 1821, occurred the unhappy encounter between John Scott, the avowed editor of the *London Magazine*, and Mr. Christie, a friend of Lockhart, the supposed conductor of *Blackwood's Magazine*, which grew out of some articles in the *London* on the management of *Blackwood*. Mr. Scott was severely wounded, and assistance being obtained, he was conveyed on a shutter to the Chalk Farm Tavern, where he lingered for a little more than a fortnight. As late as the year 1847 Lieutenant Monro surrendered to take his trial for killing Colonel Fawcett in a duel fought at Chalk Farm on the 1st of July, 1843. He was tried for the offence at the Old Bailey, and found guilty of wilful murder, but was strongly recommended to mercy. Sentence of death was recorded against the prisoner, but this was afterwards commuted to twelve months imprisonment. By this time, however, the town was encroaching very much upon the solitude of Primrose-hill, and if duelling had not been put a stop to, the duellists would have been forced to seek a new place of meeting.

In 1827 the Provost and Fellows of Eton began to see that their property would soon become valuable, and they obtained an Act of Parliament (7 Geo. IV., c. 25, Private) enabling them to grant leases of lands in the parishes of Hampstead and Marylebone. Soon after the accession of Queen Victoria, endeavours were made to obtain Primrose-hill for the Crown, and a public Act was passed (5 & 6 Vict., c. 78) for effecting an exchange between Her Majesty and the Provost and College of Eton. By this Act Eton College received certain property at Eton, and gave up all their rights in the hill. In the schedules setting forth the particulars of the transfer we read of Shepherd's-hill, Square-field, Blue-house-field, and Rugmore-close, all in the immediate vicinity of Primrose-hill. The Eton property is now largely built upon, and the appropriate names of Eton, King's College, King Henry's, Provost, Fellows, Oppidans, and Merton roads mark its position.

There is little more to be said in the way of history. On May 29th, 1856, fireworks were exhibited on Primrose-hill in celebration of the Peace, as well as in Hyde, Green, and Victoria Parks. In 1864, under the auspices of a committee, an oak was planted by Mr. Phelps, the tragedian, on the south side of the hill, to commemorate the tercentenary of Shakspeare's birth. Improvements have been made at various times. Thus, 50 acres, at the foot of the hill, were enclosed and laid out as a park; appliances for gymnastics were erected near the Albert-road; and later in time lamps were placed in the park and over the brow of the hill. These have a particularly pretty effect when lighted up at night. Few places are more appreciated by the popular pleasure-seeker on Easter and Whit Mondays than Primrose-hill, which is often so crowded that at a distance it seems as if one could walk upon the heads of the people congregated there. The summit is 206 ft. above Trinity high-water mark of the Thames, and an exceedingly fine view can be obtained from it on a clear day. It is said that on the morning of the frightful gunpowder explosion on the Regent's Canal last year, an artist was waiting there to watch the rising of the sun, and to see London gradually awake. He saw and heard more than he expected.

The old manor-house of Upper Chalcot still remains in England's-lane, but probably will soon be improved out of existence, and the site of Lower Chalcot is marked by Chalk Farm and Chalcot-terrace. In conclusion, therefore, we would suggest that, as the district bounded on the north by Belsize and Hampstead, on the south by Regent's Park, on the east by Haverstock-hill and Kentish-town, and on the west by St. John's-wood, is at present without a name, the old one of Chalcot should be revived. This would be far better than that of South Hampstead, and so good and ancient a name as Chalcot should not be allowed to die out.

NEW BOARD SCHOOLS IN GLASGOW.

WHILST one of the public bodies, viz., the Improvement Trust, is busy in the endeavour to remove from Glasgow the stigma which has fallen upon it, in having such an exceptionally high death-rate, by demolishing whole districts of unhealthy dilapidated dwellings, and thus indirectly causing the erection of numbers of new houses in the outer parts of the city, another body,—the School Board,—is making laudable efforts to provide suitable accommodation for the education of the rising population. Without taking into account the additions to existing premises, which are in themselves very numerous, it may be mentioned, on the authority of a recent statement made by the chairman (Mr. Alexander Whitelaw, M.P.), "that the Board had entered into contracts for building schools, to accommodate 9,675 scholars." Reports from the various architects submitted to the Board, at their meeting, show that satisfactory progress is being made with all these new buildings, and in some cases the schools will shortly be ready for opening. It may be stated generally, with regard to all the new schools, that they will be large and lofty, with spacious class-rooms, ample ante-room, and lavatory accommodation, with efficient heating and ventilating apparatus. Whilst the one building will, in each case, be common to both sexes, there will be separate entrances and playgrounds, and even separate staircases to enter the class-rooms, so that the boys and girls may never associate except when under actual instruction in the eye of the teacher. Each of the five firms of architects to whom the designs of the building have been entrusted, has adopted its own peculiar method of carrying out this arrangement.

Briefly describing two of the new schools situate in the same district,—in Kennedy-street and Gourlay-street, Springburn,—we find that each will accommodate 840 pupils, and their estimated cost is 7,700*l.* and 7,500*l.* respectively. The designs have been prepared by Mr. David Thomson, of St. Vincent-street. Externally, they will be plain, substantial structures, of two stories. There is, however, a belfry on the principal gable of the Kennedy-street School. A large infants' school will occupy the ground-floor, with two large class-rooms opening from it by folding-doors. Over the infants' school there will be a senior class-room of similar dimensions; and on the same flat a large industrial school-room for girls only, and a large drawing class-room in which the two sexes will receive instruction together. Mr. Thomson has also prepared the designs for a third school in Centre-street, somewhat differing from the others merely in external appearance, and the estimated cost of which is 6,500*l.*

Messrs. James Salmon & Co. have in hand three new schools, one of which the Oatlands Public School, Caledonia-road, is to be the most commodious, for which the Board has up to the present time contracted. It will have accommodation for 1,300 pupils, and its estimated cost is about 12,000*l.* It has a most eligible site, and will be a neat structure in the Queen Anne style, with a central tower. The dimensions are,—length, 124 ft., and breadth, 80 ft. Suitable accommodation has been provided for the mixed education of boys and girls, as well as infants. For the boys and girls there are separate entrances from the various playgrounds, the staircase rising from the centre of the building. The Crookston-street School, Tradeston, from designs by the same architects, and which, in common with that of Oatlands, is nearing completion, will accommodate 1,135 pupils, and its estimated cost is 11,200*l.* Externally it is a fine-looking building, in the Elizabethan style, with pointed gablets and Mansard roofs, the ridges of the roofs being ornamented with red-tile cresting. It is two stories in height, and measures 144 ft. by 50 ft. over the walls. The internal arrangement is somewhat similar on the ground and upper floor, the large mixed school-rooms communicating by folding doors with class-rooms. The infant-school, however, occupies the south side of the ground-flat, whilst the girls' industrial school is on the south side of the upper story. The Greenside School, also designed by Messrs. Salmon, and the building of which has just commenced on ground purchased from the Improvement Trustees off Main-street, Gorbals, is intended to accommodate 750 scholars. The dimensions of the structure will be 80 ft. by 50 ft., and the arrangements will be similar to those carried out in the other two schools built according to plans by the same architects. The cost, it is estimated, will be about 8,000*l.*

The plans for the Rockvilla School, Possil-road, Henderson-street, and Tureen-street Schools, have been prepared by Mr. John Honeyman. The first of these will accommodate 900 pupils, and will cost about 6,000*l.* It will be in an effective style of architecture. On the ground-floor are two large schoolrooms 43 ft. by 26 ft., connected with each of which are two class-rooms about 20 ft. by 20 ft. A similar arrangement is observed on the upper floor, the girls' industrial school, the school for senior pupils, and the drawing-class room being on the flat. Perhaps the most noticeable feature in connexion with this building, however, is the novel plan of ventilation. The heating is by means of hot water pipes, which are carried round the various rooms inside the cornice, into which a supply of fresh air is also introduced by means of small gratings in the walls. Provision is thus made for a fresh current of hot air circulating constantly from the roofs of the various departments, while the foul air is drawn through gratings in the skirting, into flues placed under the respective floors, these flues again communicating with a central shaft reaching from basement to roof of the building. Henderson-street Schools, Great Western-road, will be in the Gothic style, having a corbelled out, or bay windows in the centre of the façade, and a belfry surmounting the principal entrance. It will accommodate 900 scholars, and is estimated to cost 6,500*l.* The building in Tureen-street, which is to be in the Italian style will cost, according to the estimate 5,800*l.* and will furnish accommodation for the education of 750 pupils. The heating and ventilating apparatus in the last-named structure is arranged on a different principle to that carried out at Rockvilla, the hot-water pipes run round the floor, and the vitiated atmosphere is drawn off at the ceiling, fresh air being introduced through gratings situated about 8 ft. from the floor of the various apartments.

Thomson-street School, Dennistoun, which is from plans designed by Mr. James Thomson, of the firm of Baird & Thomson, will accommodate 886 scholars. It will be in the Italian style of architecture, and will consist of two wings, the centre portion terminating in a tower. Mr. Thomson has also furnished plans for extensive additions and alterations at the school in Hozier-street, Bridgeton, so as to make it available for the instruction of 276 pupils. Mr. Hugh H. Maclure, in addition to superintending alterations at several existing establishments acquired by the School Board, has designed three new schools in course of erection in Sister-street, Bridgeton, Barrowfield-street, and Rumford-street, to accommodate respectively 775, 742, and 711 pupils. They will be neat structures of two stories, in the simple Classic style, containing such necessary internal arrangements as have been stipulated for by the Board, and sanctioned by the Education Department.

PERMEABLE AND IMPERMEABLE WALLS.

IN the course of a lecture on "Air and Ventilation," at the Society of Arts, recently delivered by Mr. W. N. Hartley, F.C.S., some observations were made which involve the consideration of the relative advantage and disadvantage of porous and non-porous materials for the walls of buildings,—a question which we have for some time contemplated.

Mr. Hartley said,—the ventilation of a house by means of the passage of air through the walls can be shown in an exaggerated form by the passage of hydrogen through a porous material. This is not to be considered by any means what takes place in a house; that is to say, we have not the passage of hydrogen, but we have a passage of cold air through the walls of a room into the house; and this experiment is made with hydrogen simply because it is more easily shown to you than by any other means. Here is a porous vessel which may be taken roughly to represent the wall of a house, and if I bring this jar of hydrogen gas over the porous vessel, you will notice the passage of the gas through the porous vessel causes a pressure into this vessel, which ejects a stream of liquid. It has been proved, by experiment, by Pettenkofer, of Munich, that the passage of air through the wall of a house is very considerable. He examined the walls of an ordinary room in his own house, and found the change of air through the brick walls in a room, the cubic contents of which were 2,650 feet, when the difference between outside and inside amounted to 34° F., amounted to this:—

	Cubic feet.
With a fire.....	2,650 3,320
All crevices stopped	1,060
With a difference of 7° Fah. ...	780
Window open 8 ft. square	1,060

This illustrates what takes place in winter, when one's repugnance to cold air causes one to shut the door and windows and have a roaring fire. The air which cannot get in by crevices or by doors makes its way through the walls, that is to say, the doors and windows being shut, a certain increased amount of air passes through the walls into the room. What is the advantage of this? It is this, that we are supplied then with fresh air free from draft. Ventilation is not supplying fresh air, but supplying it free from draft, and this natural source of ventilation gives us really true ventilation. The amount of carbonic acid in the air may be taken on an average as about four parts in 10,000, and in order to keep the air fresh we should not allow the pollution of the air to extend to a greater quantity than two parts in 10,000 over this. Therefore the extreme of carbonic acid in the air is six parts in 10,000. When the amount is more than this, the air begins to be close, that is to say, we begin to feel by the nose that there is a certain pollution in the air which you cannot exactly account for. Six volumes in 10,000 is the amount of carbonic acid which is allowable, and all above this must be considered unwholesome vitiation of the atmosphere. Then in close places, that is to say in places which contain more than six volumes in 10,000, of which there are many—workshops, offices, public buildings, theatres, all contain, generally speaking, much more than this—we have an atmosphere which can be known as unwholesome simply by the nose. The nose tells us there is something in the air which ought not to be there. What is the reason of this? It is not carbonic acid, because we cannot detect carbonic acid by the nose. It is a certain amount of organic matter thrown off from the lungs, and, generally speaking, from the body in some form or other, and this organic matter rises in proportion directly with the carbonic acid. Therefore, if we measure the amount of carbonic acid in the air, we measure the amount of pollution by organic matter, and by determining the carbonic acid in the air, which we can do very accurately by chemical analysis, we also determine the amount of organic matter which vitiates the air. We do not know the organic matter, but we know there is more than there should be. In buildings in which the natural ventilation is not allowed free play, and in which no extensive mechanical appliances are used to contribute fresh air, this vitiation of the atmosphere goes on to a very great extent. For a few examples of this we have the analyses made by Dr. Angus Smith, and we find by this table that, in workshops, he has found the air so bad that it rose as high as 30 parts in 10,000; that is to say, the carbonic acid was very nearly ten times as much as it should have been. In theatres he found it rose to 32 volumes in 10,000 of air; in mines, 78·5, an enormous quantity; and the largest amount he ever found was 250 in 10,000. Here is a table giving an analysis of air in different places, made by Dr. Angus Smith. In a Chancery court, 7 ft. from the ground, with the doors closed, he found the proportion was 19·35 carbonic acid to 10,000; in the same court, 3 ft. from the floor, 20 3; in the same building, with the doors open, that is to say when the fresh air had entered, it was 5·07 and 4·5. Then in the Strand Theatre, in the gallery it was 10·1, in the boxes 11·1; in the Surrey Theatre, at 12 p.m., 21·8; in the Olympic, 8·17; in the Olympic, in the boxes, 10·14; in the Haymarket, 7·5; and so on. In hospitals, where great care is taken to have large free space in the room for each patient, and a supply of fresh air regularly admitted, the amount does not rise above that of the outside air. In the Queen's Ward of St. Thomas's Hospital, no more than in the outside air; in the Edward's Ward of the same hospital it was 5 2. These tables show the large vitiation of air taken in crowded buildings, and in the case of the law courts it was almost as bad as any.

The Chairman, Dr. Odling, said there was a question he should like to ask Mr. Hartley with regard to the nature of the walls through which the diffusion was noted, whether there was any great variations observed, according to the nature of the wall itself, or its covering; whether, for instance, there was any difference in painted or papered walls, or those varnished over with turpentine and linseed oil.

Mr. Hartley said, with regard to the ventilation of the walls, there was no doubt that if the wall was papered and varnished it would prevent the amount of air coming through. Pettenkofer described his experiments as having been made in an ordinary room in his house, which he stated was built of brick, plastered and papered. But there was this matter in connexion with the passage of gases through walls. If the stone used in building was not porous it was a hard stone, and the consequence was, irregular pieces were used for building, and more mortar was required; and thus a more porous material than stone was used, so that in that way a curious compensation for the non-porosity of the stone was obtained. Pettenkofer had given a curious instance of this in the case of a house built of iron slag, a substance of the nature of glass, and not in the slightest degree porous. This was cut into regular blocks, so that very little mortar was required, and when the house was built it rapidly got dry; the walls were not absorbent, and consequently the building material was not saturated with water. Very shortly afterwards the house was inhabited, however, it was pronounced to be very damp, and this dampness continued and increased until it became almost uninhabitable; in fact it was the worst house on the estate. The reason was this, that the walls not being porous, the amount of vapour given off within the house, from cooking, washing, and so on, was larger than that outside, and not being carried away through porous walls, or up the chimney by means of air passing into the house through the porous walls, condensed on the walls, which were cold. He might add that Pettenkofer found that in an ordinary wall of his house the amount of air which passed through a square yard in an hour was something like forty-three gallons, the difference of temperature between the inside and outside being he believed 16°.

The Chairman said no further evidence of the importance of the subject could be needed than the illustrations he had himself given with regard to the condition of things in hospitals and various other public buildings. He remembered, some years ago, having occasion to investigate the mortality at the Lying-in Hospital, for certain periods during which systematic ventilation was carried out, and during other periods in which it was abandoned, and difference in the mortality was most surprising, though he would not trust his memory to give the exact figures. There could be no doubt that very many lives were lost in that way for want of sufficient attention to this matter, which affected all in a great degree, but the sick in a pre-eminent degree. Mr. Hartley had raised very many practical points, particularly that of ventilation through the walls of rooms; and with regard to the nature of wall-surfaces, he had no doubt that what he had stated, basing his observations on Pettenkofer's results, was perfectly true, and that, as a general rule, one wall was much the same as another. At the same time, with regard to plastered, distempered walls, judging from a knowledge of the character of diffusion, he should think in those cases there would be really very little obstacle to the passage of gases; and probably the same thing would apply to the majority of papers. But subject to any accurate experiments upon the subject, he should be inclined to think that varnished papers or painted walls, on which there was a thick layer of either paint or varnish, would in all probability tend to interfere with this result. At any rate, it was well that attention should be given to this subject, for after all there was no doubt that the amount of air capable of entering in this way through the walls was of considerable importance. It might not be of such magnitude in the case of crowded assemblages, such as theatres, but in ordinary dwelling-rooms there was no doubt that insensible ventilation through the walls was a thing very much to be regarded.

The use of enamelled tiles, glazed bricks, or impenetrable solutions on the walls of buildings, resorted to for the purpose of keeping out wet, also keeps out the air, and may do as much harm one way as good another. Damp walls are an evil, but impermeable walls are little less so. We shall be glad to hear what some of our readers have to say on the subject.* The interior walls of some of our hospitals are coated with non-absorbent materials. What effects have been noticed there? We have before now pointed out the evils likely to arise from lining the interior walls of a house with glazed tiles.

THE MOATED MOUNDS, CAERLEON.

SIR,—In the interesting article upon "Moated Mounds," which your publication contains, there are one or two slight inaccuracies which, with all deference to such a high archæological authority as "G. T. C.," I will ask your permission to rectify.

In his notice of the Mound in the castle-grounds, Caerleon, he states that the "top has been much cut about, and was recently hollowed as a reservoir." This is not so, but whilst it was in the possession of the late Mr. John Jenkins, jun., that gentleman had the circumference of the top raised several feet, which thus caused the hollow in the centre.

In the enclosure thus formed there used to be an excavation which was generally filled with water, and this circumstance, I have no doubt, has unconsciously led "G. T. C." into error.

This excavation was simply a tank which formerly existed in connexion with a summer-house, but both these have disappeared for some time.

It is also stated that this property has come to the descendants of the Morgans of Tredegar. For many years, at all events, it has ceased to belong to that very old and noble family; for, since 1866, I happen to be the fortunate owner of this archæological bijou, and previously to that it belonged to the late Mr. John Jenkins, jun., who laid out the grounds at a great expense, planted the Mound, and enclosed the whole with a very strong castellated wall.

* The question is mooted in a useful little book published by Smith, Elder, & Co., "Sanitary Arrangements for Dwellings," by William Bassie, C.E. The author maintains that it is "better to build with very porous bricks, than with bricks which cannot absorb water at all, nor transmit air."

The grounds surrounding the Mound and covering the site of a Roman villa, are rich in remains of that period, as the little Museum of Caerleon testifies, containing, as it does, many articles of great archæological interest, which were found there and presented to that institution by the late Mr. John Jenkins. A court-yard of some cottages belonging to this property is paved with Roman bricks found in these grounds, and many still bear a good impression of LEG II AVG, and even during the few years since it has been in my possession several Roman coins have been disinterred. Amongst them, Nero, Antoninus Pius, Gallienus, Carausius, Constantine (Urbs Romæ: Soli invicto Comiti) (London Mint), and Helena (Securitas Reipublicæ).

There is a tradition in the place that formerly from the top of the mound might be seen the Bristol Channel, the view of which is intercepted by the Christchurch-hill, and, if so, the height must have been considerably greater than it is at present, and upon it may have stood the "Giant's Tower," of King Arthur's time, or the gigantic tower Giraldus speaks of.

Caerleon, formerly the seat of an archbishopric, is rich in old associations. It formerly enjoyed the primacy of Britain, and with it the names of Saints Julius, Dubritius, and David are intimately woven. So great, indeed, was its worldly splendour and gaiety, that St. David, pining for greater solitude, begged the Pope to have his see removed to a more retired spot, and for this reason it was transferred to St. David's. The grounds surrounding the Mound, now inclosed by very massive walls, is indeed a hallowed spot, for there King Arthur, as his legends tell us, formerly held his court, and there he always kept the Feast of Whitsuntide, and there the old Welsh and Norman lords revelled long after the Romans had left, and the former occupancy of them by the second Augustan legion had become a matter of history.

Pray pardon this digression, but to readers of Tennyson and lovers of archæology these notes may be interesting. ROBERT F. WOOLLETT.

THE USE OF THE HAND AS AN OPTICAL INSTRUMENT.

IN an interesting paper on this subject in the *Illustrirte Industrie Zeitung* (No. 6, 1875), Dr. F. Thomas, of Uhrdorf, observes, that although artists are well aware of the advantages of monocular vision and the use of the hand as an impromptu stereoscope for the inspection of pictures, the public generally knows nothing of them. Any one who carefully watched the crowds that daily thronged the avenues of the late Vienna Exhibition might have seen how very, very few persons amongst them ever availed themselves of this ready resource.

And yet, how different is the appearance of a really good picture thus seen and the same viewed in the ordinary way by binocular vision! Regarding it with a single eye through the hollow of the hand as through a stereoscope, we get a relief, a substance, which otherwise is more or less wanting; in a word, we get the third dimension, *depth*, which is indispensable to realistic effect. Nor is the method applicable to the contents of picture-galleries alone: every photograph, every engraving and print of correct design, may be beneficially treated in the same way. As with the stereoscope, so with its impromptu substitute, we get increased focal length, and with it the several artistic advantages thence accruing. On the other hand, defects in drawing are ruthlessly exposed by the same means. Trifling errors in perspective, which might have passed unnoticed under ordinary circumstances, stand revealed in their full deformity.

Less familiarly known, perhaps, is the aid that may be derived from this use of the hand in correcting our notions of the *size of artistic objects*. Take, for example, a portrait,—say, that of Prince Bismarck in the *Illust. Zeitung* for 1863; regard it attentively with one eye through the hollow of the hand, the other eye being shut. The figure stands out boldly in relief. Open the other eye and remove the hand, and the illusion vanishes at once. The appearance of relief has gone, but the figure looks *larger than before*. Photographs are particularly well suited to an experiment of this kind, as with them there is no destruction of the stereoscopic effect, as sometimes happens with prints and engravings.

Here the causes of the illusion are evidently mental. Just as previous conceptions of the size and colour of a distant mountain may be changed by placing the observer's head in some unaccustomed position, so in the case in question we have to deal with psychological, not physiological causes. By regarding the object with one eye only through the hollow of the hand, we unconsciously place ourselves at the artist's standpoint; and as he saw it at the moment of execution, so must we see it to realise the effect aimed at. By removing the hand, this effect is destroyed, and the figure comes before us with that *apparent* increase of size which even the most familiar objects acquire by closer approach, irrespective of their real magnitude. A well-known illustration in point is, that the moon's disc, when close to the horizon, may be reduced to its ordinary dimensions by thus viewing it steadily through the hollow hand.

With juster perceptions of the magnitude and relative dimensions of objects, monocular vision combined with the stereoscopic use of the hand gives us, also, a correcter appreciation of the effects of reflected light. And this applies not only to the confused appearance occasioned by the interposition of highly reflective media between the object and the observer, but also to artificial reproductions of the same effect. Look at the "Imperial Service of Bohemian Glass," in the *Illust. Zeitung*, No. 1,577, with one eye, through the hollow of the hand, and note how boldly the several objects stand out, and how well the glitter of the glass is reproduced. Observe the same in the ordinary way, by unassisted vision, with both eyes, and how crude and unreal appear the patches of white light on the several objects!

Another point ignored in every treatise to which Dr. Thomas has had access, is the effect of the hand when thus used, in modifying and correcting our perceptions of colour. The rays of the setting sun are flooding the landscape with golden light. Prominent in the distance stands forth a church-tower lighted up with a rich orange glow. By regarding it attentively through the hollow of the hand, and opening and closing the latter suitably, the tower can be made to assume any intermediate tint between the white it really is and the orange it has assumed in the rays of the western sun. The woods, too, dark, sombre, and night-like to the unaided vision, in like manner can be made to resume the hues they wore in the broad light of noonday. A bright patch on the far distance shows a soft subdued white, and we notice then for the first time that to the unassisted eye it presents a bright golden colour.

Indeed, our conceptions of colour are mainly dependent on comparison—contrast. But these are quite inadequate to enable us, under all circumstances, to detect and discriminate between minor differences of shade by ordinary unaided binocular vision. For that purpose, we must have recourse to the hollow of the hand, looking through it at the object with one eye, and comparing the effect observed with that produced on the other and unshaded eye. Both eyes may here be open.

In such cases, the chief point is not monocular vision, but the shading of the eye by the hand thus applied. As with a Nicol's prism, we thus restore the equilibrium of the blue light diffused through the atmospheric regions—which in the landscape above referred to was overpowered by its complimentary colour, the orange emanating from the sinking sun—and are so enabled to see objects under the hues they would present when viewed by the white light of a noontide sun.

OUR IMPORTS OF TIMBER.

THE recently issued returns of the Board of Trade, showing the imports and exports of the United Kingdom for the past year, give some interesting information concerning the quantity and value of timber brought into this country from abroad.

During 1874 we find that Russia, Sweden, and Norway, Germany, British North America, and various other countries were laid under contribution to supply our wants in this respect. Of hewn timber, Sweden and Norway yielded the largest supply, viz.: 622,810 loads, valued at 1,405,701*l.*; Russia comes next with 496,732 loads, worth 1,202,240*l.*; our North American colonies supplied 476,375 loads, the value of which is given as 2,157,718*l.*; from Germany we received 299,434 loads, valued at 1,080,218*l.*; and from various other sources 552,043 loads were received, worth 2,019,788*l.* These figures give a total of 2,447,394 loads, and 7,865,665*l.* Besides this, the following quantities of wood, sawn, split, planed, or otherwise dressed, were received:—

From	Loads.	Value.
Sweden and Norway	1,520,528	..... £4,927,027
British N. America.....	1,076,188	 3,339,386
Russia	937,643	 3,052,138
Other Countries	270,890	 1,081,740
	3,805,247	£12,400,291

And "staves" of all dimensions, were imported to the extent of 124,341 loads or 924,914*l.*

Mahogany is honoured with special and separate notice, and figures from 65,011 loads valued at 639,558*l.* These figures thus show that a total sum of 21,830,428*l.* was spent by this country on foreign timber.

CHRIST CHURCH, WESTMINSTER BRIDGE ROAD.

THIS building, of which we give an interior view, is now in course of erection at the junction of the Westminster Bridge road with the Kennington-road. It is being built with the object of continuing the work hitherto carried on in connexion with the building known as "Surrey Chapel," situated in the Blackfriars-road, which was founded by the Rev. Rowland Hill in 1783. The foundation-stone of the new building was laid in the summer of 1873, by Mr. Samuel Morley, M.P.

The church will accommodate about 2,000 worshippers, and the aim has been to secure a thoroughly ecclesiastical and architectural building, and, at the same time, to bring each individual, as far as practicable, within hearing and sight of the pulpit. This led to the arrangement seen in the view, namely, a cruciform church consisting of short nave and transepts, with aisles in the usual manner, meeting in a large central octagon about 55 ft. in diameter. The leading idea is similar to the arrangement found in Ely Cathedral. The eastern arm contains the choir, and has an apsidal termination. The floor of this portion is raised 4 ft. 6 in. above the level of the church, and is approached by a flight of nine steps. Round the apse are canopied seats for the elders of the church, with a central stall for the "Presbyter." The two windows in the apse will contain painted glass by Messrs. Clayton & Bell, representing subjects from the passion and triumph of Our Lord. The eastern compartment will not be pierced. The large window of the north transept will also be filled with painted glass by Mr. Drake, of Exeter, representing the miracles of Our Lord. There will also be painted glass in other parts of the church.

The main piers of the central octagon are of Portland stone; the bases are of Tenby black marble. The vaulting shafts throughout are of various coloured marbles polished. The central octagon and the choir will be groined in wood-work, with moulded wood ribs. The height to the central boss of the octagon will be about 70 ft.

In connexion with the church are a tower and spire standing almost detached. The height to the top of the spire is about 200 ft. The lower stage of the tower will be groined in stone, and will form one of the principal entrances to the church. The tower is being erected as a monument in commemoration of the abolition of slavery, and has been called the "Lincoln Tower." The cost was in great part raised by the Rev. Newman Hall, in America; and the memorial stone was laid by General Schenk, the American ambassador to this country.

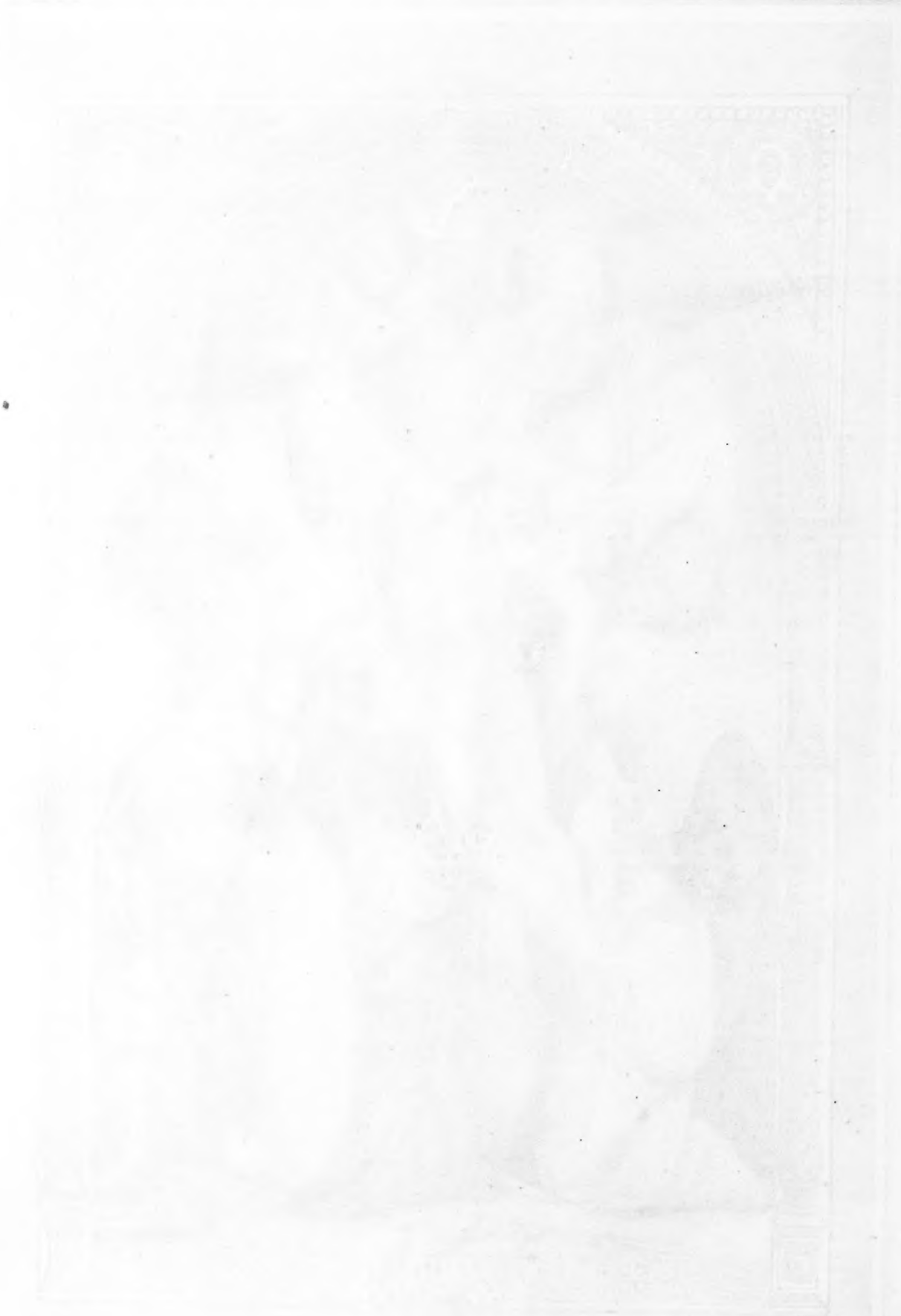
In addition to the church there are a school-room, a lecture-hall, facing the Kennington-road, capable of accommodating 800 persons, with class-room and other accommodation; also an infants' school with class-room, &c.; vestries for the minister, elders, and choir respectively, a house for a resident verger, committee-rooms, and other accommodation. The external designs throughout are of Portland stone; the walling is of Kentish rag, and is a good specimen of masonry. The foundations were executed by Mr. W. Higgs, contractor; the superstructure by Messrs. Perry & Co., of Bow. The entire cost of the various buildings, including heating, lighting, &c., will be about 45,000*l.* The architects are Messrs. Paull & Bickerdike, of Adam-street, Strand.

Christie's Patent Life Rafts.—The description given of these agrees pretty fully with a suggestion made in these pages some time ago.

CHRIST CHURCH, WESTMINSTER BRIDGE ROAD.—INTERIOR VIEW (LOOKING EAST).

MESSRS. PAULL & BICKERDIKE, ARCHITECTS.

STAINED GLASS WINDOW RECENTLY ERECTED IN THE CHAPEL OF THE LICENSED VICTUALLERS' ASYLUM, OLD KENT ROAD, LONDON.



THE LICENSED VICTUALLERS' ASYLUM.

NEW STAINED GLASS WINDOW.

THE Licensed Victuallers' Asylum, which is situated in the Old Kent-road, was established in 1827 for the purpose of providing habitation and other necessaries for the distressed members of the trade and their wives or widows.

On the 28th May, 1828, the foundation-stone was laid by his late R.H. the Duke of Sussex, who had a short time previously consented to become the patron of the institution, and the centre portion of the building, consisting of forty-three houses, was erected; in 1831 the south wing was built, and in 1833 the north wing, each containing twenty-nine dwellings, which completed the original design of the asylum.

In 1842 her Majesty granted a charter of incorporation, and in the following year his R.H. the late Prince Consort consented to become the patron of the society upon the demise of the Duke of Sussex.

The candidates for the benefits of the asylum being numerous, and steady progress having been made for some years, it was deemed advisable to extend the accommodation. Consequently, in 1849 it was determined to erect twenty-three additional houses, the foundation-stone of which was laid by the Prince Consort, and the block was designated the Ladies' Wing. In 1858 further houses were commenced to be built, which were named the Albert Wing, the Prince Consort again attending to lay the first stone. This wing consists of thirty-four houses, and in 1866, the Smalley Wing, comprising ten habitations, was erected, the foundation-stone being laid by H.R.H. the Duke of Edinburgh. This addition completed the asylum as a building, and it now consists of one hundred and seventy separate and distinct houses.

The expense of the Institution exceeds 7,000*l.* per annum, nearly the whole of which has to be raised by voluntary contributions.

Upon the grounds is erected a marble statue to the memory of the Prince Consort, and on the 9th August, 1864, his Royal Highness the Prince of Wales honoured the institution with his presence to unveil the same, having also a short time previously consented to become the patron of the asylum.

Some few years since, the chaplain to the asylum suggested that the chapel should be adorned with stained-glass windows, since which time twelve works of art have been presented to the Institution, nearly the whole being erected under the superintendence of the Society's past chairman, Mr. Thomas Whaley. The expense of the first window was raised by subscriptions in memory of the late Mr. William George Drew; another to perpetuate the memory of the late Mr. Thomas Jones, who for thirty-four years was secretary to the Institution; the remaining windows being the gifts of the following gentlemen:—Sir Thomas White, alderman; Mr. John H. Foster, president of the Society's festival in 1866; Mr. Dodshon Foster; Mr. Henry Doo Rawlings, president of the festival in 1868; Mr. Leer J. Drew; Mr. William Yardley, chairman in 1874; Mr. Henry Phillips; Mr. George Richard Speedy; Mr. James William Thurston; and Mr. Frederick Strange.

In addition to the stained-glass windows, several handsome marble tablets are erected in the chapel to the memory of the following deceased benefactors, viz.:—H.R.H. the Duke of Sussex; H.R.H. the Prince Consort (patrons of the Institution); Mr. Joseph Proud Hodgson, projector of the asylum; Mr. William Adams Larby, the first chairman of the Institution, 1827-8 and 1829; Mr. Edward Huggins; Mr. Samuel Beeton, chairman 1830; Mr. John Vousley, chairman 1831; Mr. Charles Wilson, chairman 1834; Mr. William Wallis, chairman 1845, who also bequeathed nearly 500*l.* to the Institution; Mr. Charles Kemp, chairman 1846; and Mr. Thomas Jones, late secretary.

The present chairman of the Institution is Mr. C. J. Coles, of the White Conduit House Tavern, 14, Barnsbury-road; and its secretary, Mr. Alfred L. Annett, whose office is 67, Fleet-street.

Mr. James Hallett, the chairman of the past year, feeling that the chapel would not be complete, in respect of stained-glass windows, unless one adorned the chancel, intimated his willingness to contribute 100*l.* towards the expense of obtaining it; and his colleagues on the board of management, in accepting his generous contribution, expressed their intention of personally defraying the balance of the expenses attending the production of the window, and the necessary alterations for the reception of it. These alterations were carried out by Mr. F. Blott, of Stamford-street, under the superintendence of the Society's architect, Mr. W. F. Potter, of Guildford-street, Russell-square, the window being executed by Mr. Alex. Gibbs, of Bloomsbury-street, who is at the present time engaged in the preparation of the decorations of Keeble College, Oxford, the outlay upon which will amount to some thousands of pounds.

The new window was unveiled on the 24th of January last. The subject of it, as our engraving shows, is "The Descent from the Cross," and it has given much satisfaction to those for whom it was executed. The following inscription, cut in marble, appears at the foot of it:—"This east Window is the gift of the Chairman and Board of Management of the Asylum for the year 1874.—James Hallett, chairman." The names of the trustees and governors of the Institution, and also those of the Rev. W. G. Martin, M.A., chaplain, and Alfred L. Annett, secretary, appearing at either side of the shield, also cut in marble.

A MASTER'S VIEW OF TRADE-UNIONISM.

MR. PETER GRAHAM has published the lecture "On the Tendency of Trade Unionism," delivered by him at the Quebec Institution.* Mr. Graham explains that he had promised to deliver this lecture at the latter end of September or early in October last, to show that the choice of a subject could have no reference whatever to the events that occurred in November at one of the factories of his firm, and he disclaims any intention whatever of taking a one-sided view of this important subject. Mr. Graham, we believe, has always manifested interest in the welfare of the working classes, and his statements may doubtless be accepted as the result of honest convictions, whether their correctness be acknowledged or not. We print some portions of the lecture:—My opinion is, that a history of strikes, with a debtor and creditor account appended, would show that when they have been successful, the result gained has never been worth the sacrifice of wages and the suffering endured while they lasted. If this be the result of successful strikes, how great must be the loss, severe the hardships, and sad the misery and disappointment when they fail? If my opinion is well founded, it follows that strikes are an unmixed evil; and as the tendency of trade-unionism is to encourage and support them, the operations of the unions are, so far, injurious to the interests of both labour and capital, which, when rightly understood and directed, are identical. It may be urged that the large increase of wages which has taken place in some trades, and the shortened hours of labour, have been brought about by the organisation and action of trade-unions. I think the unions have had but little real influence in the achievement of these results, and that they are mainly due to the gradual removal of commercial restrictions, dating from the repeal of the Navigation Laws, the final triumph of free trade in the repeal of the Corn-laws, and the gold discoveries in California and Australia. I am confirmed in this view by the fact that a general increase of wages has taken place, and in some cases to a greater amount, among classes which have had no unions.

The tendency of unionism is to reduce, or keep down, all workmen to the same dead level, no matter how much more capable and industrious some may be than others, and any member of a union who does a fair day's work, if working for daily wages, is looked upon with suspicion, and if he does more he is warned that he must restrict his work to the limit of what slow, or ordinary, workmen can do, failing which he may be expelled from the union. I will take the case of joiners in London, whose wages have been advanced from 5*s.* per day, or 6*d.* per hour, to 9*d.* per hour, within twenty years, or 50 per cent., and the working hours reduced; the latter operating as an increase of establishment charges in proportion to the diminished production. Sir Edward Watkin very recently stated that the reduction of working hours from ten to nine at Ashford, cost the shareholders of the South-Eastern Railway 4,900*l.* a year. But this is not the only change. One would naturally think that, as the working hours were reduced, the work per hour would be at least equal to what was done before, instead of which it is 20 per cent. less. I have frequently, on walking through a joiners' shop, observed with anxiety and regret how the men were playing with their work, or carefully trying how not to do it, and thus acquiring a slow habit of working or partially wasting their time. There is no branch of mechanical industry in which machinery has been more extensively introduced than in joiners' work; in fact, all the hardest or most laborious operations are now done by machinery, such as sawing, planing, mortising, and tenoning, and running mouldings, leaving nothing but light and easy work to be done by manual labour. The use of machinery has thus been of enormous advantage to the working joiner, and has also, in some degree, moderated the great increase of cost in joiners' work in building and other operations.

There is a slight drawback, however, to these advantages, as, thanks to the vexatious restrictions and regulations of the unions in other branches of the building trade, the men employed have to pay an increased rent for their houses, or lodgings, in common with the rest of the community, and the cost of building having, through the action of trade-unions, increased at least 25 per cent., rents have advanced accordingly. One effect of the increased cost of labour in building, through the partial idleness of our carpenters and joiners, is that much work is now being done abroad, leading to the importation of finished work, such as doors, windows, and prepared flooring-boards. This importation will doubtless increase until trade-unionism permits the joiner to give a fair day's work for the high wages he receives. They cannot hope that protective laws will be re-enacted against importation, in order to keep up the wages of a class, and thus tax the whole community for their benefit. Trade-unionism may, indeed, be described as protection in its most aggravated form,—every union seeking to tax all users and consumers for its own advantage.

The action of trade-unionism among the London cabinet-makers, who are a respectable and intelligent body of men, has been to render them, as workmen, in some respects less skilful and industrious. Machinery has been largely introduced by the most important chair and cabinet makers, and does all the hard work, so that manual labour has been much lightened. Members of the West-end Cabinet-makers' Union work either by the hour or the piece, according to a book of prices agreed upon by employers and workmen in 1811, in which very little alteration had been made until 1866, when it was agreed to advance the prices for piecework 10 per cent., and daywork in the same proportion. In 1872 another advance of 10 per cent. was agreed to on the book prices and daily wages. When the first advance was made, the employers fully expected the men would earn increased wages to the amount of it, and were disappointed to find that less work was done, and the earnings remained about the same. The effect of this was to increase the establishment charges on the cost of all work done, in addition to the increased cost of labour; thus further raising the price to the purchaser. This was pointed out to the cabinet-makers when they asked for a further advance in 1872, and, on the advance being conceded, they promised to earn the full amount of it. This they have not done: their earnings, as I am informed, have only increased 8 per cent.; so that advances of 20 per cent. on piecework (all the hard work being done by machinery) have only added 5 per cent. to the earnings of the cabinet-makers; while the increased cost of production has added, on an average, 25 per cent. to the selling prices. The Cabinet-makers' Union book of prices to which I have referred is so framed that the meaning is open to different interpretations, although it would appear plain enough if self-interest did not try to twist it another way. Ever since the introduction of machinery, the committee of the West-end Cabinet-makers' Society have been raising discussions upon the interpretation of the meaning of the book, and settling them in favour of the workman, and, when once admitted, have stood upon them as precedents; the result being, in some classes of work, a considerable advance upon the prices previously paid.

Notwithstanding this, and that all the heavy work is now done by machinery, the young cabinet-makers earn less wages than the former generation did, and I think this result must be traced to the influence of the union. Very few among them can make out an account for making a piece of furniture by the book, and they generally pay some one who has carefully studied the book to do it for them.

* London: Edward Stanford, Charing-cross.

The work is now so much lighter and easier than formerly, that the cabinet-maker of the present day does not find it necessary to study very closely the method of setting out his work so as to save time and labour, and thus increase his earnings; and it is partly from this cause that the younger generation of cabinet-makers have become less practically skilful than that which is passing away, and earn less, when they ought to earn much more, without working so hard for it. The quality of the work is as good as it ever was.

The question of advance of wages is too frequently treated as if it were merely one between the employers and employed, the latter endeavouring to obtain a portion of the profits of the former in the shape of increased wages. This is a mistaken view of the subject. It is true the employer stands between the consumer and the workman, and has to bear the first brunt of any increase of wages, but he adds it to the cost of his productions, and increases the price to purchasers in proportion to the increased cost. The public, therefore, pay the increased wages, not directly to the workman, but in the price paid to the manufacturers; and the question is thus, in almost all cases, really between the artisan and the public, as the profits of the manufacturer are so kept down by competition that they will seldom admit of any reduction.

It may be asked, if the manufacturer generally obtains an increase of price to cover the increase of wages he may have had to pay, why he should almost always be opposed to an advance of wages?

There may be various reasons. In some cases competition may be so severe that it is hopeless to obtain any corresponding advance, and he knows that every increase of price tends to diminish the demand, whilst every reduction tends to increase it, and the wages upon which an advance is sought may at the time be high, relatively, to those paid in other similar manufactures.

The general tendency of trade-unionism has been more or less mischievous in every branch of industry with which the unions have interfered, not because there is anything wrong in associations, but because the views of their leaders, however well meant, have been so frequently at variance with sound principles of political economy, and even when right, as in some recent cases, the sound advice tendered by them to their members has not been followed.

The true policy for trade-unions to adopt, is not to attempt to fix any hard-and-fast line for either wages or working hours, but to leave their members free to earn as much as they can, and to work as long as they like; so that a man whose labour, when not restricted, is worth 9s. or 10s. per day, may receive it; while another, who can only earn 5s. or 6s. at the same occupation, may be paid fairly, instead of at a fixed rate of wages higher than his labour is worth. The present system operates to the injury of the slow or inefficient workman, who is the first to be thrown out of employment in slack times, from the relative dearness of his work; and equally so to the quick and clever workman, by limiting his earnings.

An attempt at coercion, by one of the unions in the metropolis, which has now been continued for three months, and is still actively going on, shows the spirit in which unionism operates.

A West-end cabinet-maker, whose factory had been recently erected and fitted with the newest and most improved machinery, to do all the most laborious work, as in the case of joiners, leaving the cabinet-makers little more than the fitting, finishing, and putting together the various parts to complete a piece of furniture, gave notice that in future the system of pay would be changed to payment by piece-work instead of payment by the hour, and that all the men who were willing to agree to the change might continue their employment. The men consulted the committee of their union, and the decision was, that they should strike against the change (although many members of the union were working by the piece in other shops); and accordingly, in obedience to the union, but contrary to the wishes of many of themselves, they all left but two, and removed their tools. No fault could be found with their decision; they were free to accept or refuse employment on the terms offered, and it would have been very wrong on the part of their late employers to have made any attempt to prevent their obtaining work in other shops. The union immediately set to work with great energy to prevent, by all means, legal or illegal, any cabinet-makers from applying for work to the firm in question. They wrote, or telegraphed, to their emissaries or correspondents in all the principal towns in the kingdom, as well as to Paris and Brussels, urging them to take means to prevent men coming to occupy the places of those who had been withdrawn, and they carefully picketed the workshops, in order to intercept all who came. Three men have been daily employed as pickets, and, by threats, promises, and pay, they have succeeded in preventing many men from applying for work; and they have spirited away some men who had come from the country and agreed to take employment, by paying their expenses and keeping them idle at the rate of 9d. an hour. The threat they generally use is that the firm must yield and take the union men back, when all those who have taken employment in the meantime will be discharged, as the union men will not work in the same shop with them. The union has spent a large amount of its funds in this tyrannical attempt: the men acting as pickets receive each 1s. per hour; much money must have been paid for men's expenses and for bribing them not to apply (in one case 5*l.* were paid), and the number of men kept in idleness at 9d. per hour must have cost a considerable sum.

Notwithstanding all its unscrupulous efforts, the union will fail in its object, after causing much inconvenience and annoyance to both sides, and a large illegal and wasteful expenditure of its funds.

In this country, for some years past, the relations between that portion of labour represented by trade-unions, and capital, as represented by employers, have been those of hollow truce, or open warfare, and both parties have regarded each other with a feeling of watchful distrust, or hostility, instead of that peace and goodwill which should exist between them. Trade-unionism should abandon this erroneous and aggressive policy, cease its vexatious interference with capital, and leave freedom of action to its members. All disputes should be referred to arbitration when they cannot be settled by conferences between the employers and the employed, and strikes and lock-outs should never be resorted to, except in very extreme cases of injustice or oppression, on one side or the other, and then only after an appeal to the judgment of impartial and disinterested men, who, upon consideration, should express an opinion that a strike or lock-out would be justifiable by the facts laid before them. The adoption of this course would put an end to strikes altogether, and leave the funds of the union free for other and better uses; and my suggestion is, that the unionists should become capitalists upon co-operative principles. I see but little difficulty in this. Already the unions have, in the aggregate, large funds in hand, which, under the change of policy, would not be required to be drawn upon for expenditure in support of strikes and other measures necessary to maintain a war against employers; and a part of the subscriptions of members of the unions might be appropriated to the formation of Trade-unions Investment Companies, upon the principle of limited liability, with power to invest in interest-bearing securities, or in manufacturing and commercial undertakings. It will be said that one great difficulty in the organisation of industrial undertakings of workmen, will be that of finding competent and trustworthy managers, but this difficulty exists with every undertaking, and would be no greater with them than with others. There are men among themselves who have practical knowledge and experience in every branch of manufacture, and the commercial ability, or scientific knowledge, that might be required, would, no doubt, be obtained at a fair rate of remuneration.

Let us consider for a moment how soon companies might be formed, and an enormous amount of capital raised, by the exercise of a little self-denial by a million of men. In the financial year ending April, 1873, the increase of the revenue from excise duties was about two millions sterling. This was the year during which the great advance of wages took place, and the increased excise revenue of two millions represents an expenditure of about eight millions sterling, chiefly in alcoholic drinks, by the working classes. If this sum of eight millions had been saved and applied to the formation of investment companies, they would have had an aggregate capital about equal to the paid-up capital of all the joint-stock banks in London, exclusive of their reserved funds. Assuming, notwithstanding the great reductions that have recently been made in the wages of the large number of men employed in the coal and iron trades, that the average earnings of all the members of trade-unions (making allowance for those who may sometimes be out of work) amount to 30s. per week, the estimated number of members will receive in wages a million and a half sterling per week, or 78 millions sterling per annum, out of which, by a little self-denial, from four to eight millions might be saved and invested, without interfering with their contributions to the unions as friendly or benefit societies. The existing management of the trade-unions might greatly facilitate the formation of such companies.

I have always considered the idea of industrial partnerships based on a false principle, one-sided, and therefore unjust, and that there should be no participation in profits by those who did not participate in risk of loss. For this reason: Profits vary according to circumstances; sometimes they are large, and then a reserve should be made; sometimes they are so small as not to afford a fair remuneration for the capital employed; and sometimes there may be a loss from bad debts, or other causes, on the year's trading, which must necessarily be borne by the capitalist; the industrial partners being paid for their labour, and having no capital employed in the undertaking, are not subject to loss. If skilled artisans and working men would read the published reports of the present condition of their class in every country in Europe, which have been furnished by our consuls to the Foreign Office, they would find, on comparison, that their own is, in every respect, far superior, and that they are fortunate in having been born in Great Britain. Whence arises this superiority? Chiefly from the greater abundance and cheapness of capital in this country employed in mining, manufacturers, and commerce, which creates employment for an increasing population, and maintains wages at a higher rate than in other countries.

The great impediment to the improvement of the working classes has been caused by the want of a system of national education. Thanks to the beneficial legislation of late years, so long retarded, as regards the education of the people, by the mutual jealousies of church and chapel, this has now been provided; and we may expect to see the evils which have resulted from ignorance gradually disappear; and, as progress is made in this direction, the true relations of labour and capital will become better understood by the toiling millions of this kingdom, and it may be hoped the guides and leaders, together with the members of trade-unions, will see the errors I have endeavoured to point out.

ANCIENT INDIAN MONUMENTS.

GENERAL CUNNINGHAM, director-general of the Archæological Survey, has lately submitted some remarks and suggestions to the Government of India with reference to the proposed preservation of the ancient monuments of that country to which we recently called attention. He says that according to his experience some of the finest buildings in India have suffered at least as much from the carelessness or rapacity of individual spoilers as from the hands of time; and in order to protect such of them as remain from the ravages of these ignorant and greedy plunderers, he advises that those which are not actually in use as places of worship should be placed under the sole charge of the chief civil authority of the district in which they are situated, and that he should be held responsible for their preservation. General Cunningham advocates the simplest measures of conservation. In old stone buildings, he says, the chief causes of ruin have been the fracture of beams and the splitting of pillars under enormous pressure; and instances the great Jain Temple in the Fort of Gwalior, of which all the main beams were cracked across, while many of the pillars had given away altogether and disappeared. In 1844 he himself repaired this temple by putting upright stones in place of the missing pillars, and building walls under the broken beams. By these means the edifice was saved from ruin, and as the work then done has proved quite sufficient up to the present time he thinks that similar precautions might be used with good effect in the case of other Hindoo temples, and strongly recommends that wherever pillars have actually gone and left a portion of the roof unsupported either upright stones or square masonry pillars should be set up in their place. With respect to brick buildings, the usual cause of decay is the

gradual mouldering away of the bricks near the bottom of the walls from the action of saltpetre, and the pertinacious neglect of the natives, whether Hindoos or Mahommedans, in renewing the decayed bricks. From this cause alone all the finest brick buildings have suffered more or less. The only real remedy which General Cunningham can suggest for such decay is to replace the lower portions of the outer faces of the walls with sound bricks set in mud plaster.

NEW PUBLIC BUILDINGS IN CARDIFF.

A LARGE number of both public and private buildings are in course of erection in the improving town of Cardiff, which is rapidly becoming the leading seaport in Wales. These new buildings are gradually adding to the architectural appearance of the several thoroughfares. Amongst other new structures which have recently been built, the new Cardiff and County Club, now fast approaching completion, is one of the most ornamental and prominent buildings in the town. It is situated in St. Mary-street, one of the main thoroughfares, and is three stories in height, exclusive of the basement and the ground floor. It is built of Ashlar, with Bath-stone dressings. The central portion of the elevation, from the basement to the upper floor, has projecting windows, surmounted by a balcony. Over the entrance to the building is a tympanum, with the inscription in the centre, "Cardiff and County Club." The entrance is by a flight of three steps, leading into a vestibule. The ground-floor contains a large dining-room, also a reading-room, together with a bar and offices. The first floor contains a billiard-room and card-room, with rooms for visitors, and offices for servants.

The Glamorgan Club House, another new building, has just been finished and opened. It is situated at the corner of Dumfries-place, another of the principal thoroughfares. This building has been erected of limestone obtained in the district, with Bath-stone dressings. It is in the Elizabethan style of architecture, the upper story being surmounted by gables. The principal entrance, which is opposite the station of the Taff Vale Railway Company, leads into a vestibule, and thence into a spacious dining and coffee room. A pair of folding glass doors afford communication with a conservatory, beyond which is a large billiard-room.

A new public hall in Canton, which is about to be incorporated with Cardiff, is also projected. Lately, the mayor of Cardiff presided at a public meeting which was held in support of the undertaking. The proposed building is to contain a reading-room, library, lecture-room, and room for meetings and entertainments, and other apartments, and is to be built by a limited liability company. The ground floor will consist of shops, the reading-room and the other apartments belonging to the hall being in the upper part of the building.

Here and there, even in the principal streets, a few specimens of old Cardiff still remain; but these are constantly disappearing to make way for more modern and palatial buildings, and the structural relics of Cardiff, as it originally appeared, are rapidly in course of demolition.

BUILDING AND CIVIL ENGINEERING IN JAPAN.

THE Japanese, who seem possessed by a perfect mania for introducing the civilisation, the inventions, and the manners of the West, have not neglected to imitate our railways, our styles of architecture, and our modes of laying out our towns and villages. The latest volume of consular reports shows that under European supervision the imitations can scarcely be distinguished from the original models, but the Japanese, when left to their own devices, contrive to obtain an outward resemblance, while they perversely overlook the most essential parts of the work, and set all fundamental laws at defiance. Thus, the consul at Osaka reports that the Government have lately erected there a large building intended as a City Hall, which is to contain all the different departments of the local Government, with the exception of the Custom-house. It is an imposing-looking edifice, built on a foreign model, has long rows of columns in front, and is surmounted by a high dome. The Government asked Major Kinder, the Director of the Imperial Mint, to furnish the original designs; but, instead of allowing him to superintend the construction of the edifice, they handed his plans over to native officials, with instructions to put them into execution. The result has been an extraordinary building. Wood has been used where stone should have been employed, in columns, windows, arches, &c. The principles of modern architecture have been utterly ignored, and in a very few years the structure will decay, if it does not previously fall to pieces. They are thoroughly in earnest, however, as to quantity, if not as to quality, and from almost every consular station there is a record of constructive progress. The port of Niigata in particular has been almost transformed within the last five years. The streets have been levelled and paved with gravel, rain-water and *débris* are removed by a fair drainage system, and a scavenger corps performs its work every morning. The canals traversing the town in all directions have been deepened and lined with planks, and a branch of the river has been conducted through the main canals, in order to prevent the water becoming stagnant, and prejudicial to health. Lamp-posts have also been erected at a distance of 100 ft. from each other throughout the entire town, and the streets are now lighted every evening with coal-oil. One of the river-islands situated immediately opposite to the town, and formerly covered with pear-trees, has been connected with it by six wooden bridges, the ground has been raised 3 ft., and it is now laid out in wide streets, and almost covered with handsome buildings. Judging from the number of houses recently erected, the British consul supposes that the population has increased about one-fifth. The wages of stonemasons and bricklayers, which were formerly very poor, have now become very high throughout the country, and a good native hand can earn five or six shillings a day at piecework, while he can live comfortably for as many shillings a week. Unless married, however, the ordinary Japanese artisan is not of a saving disposition, and his easily-earned money is quickly spent.

RHYMES FOR IMPROVERS.

THE *Bailie*, having offered a prize of a copy of the title-page of his forthcoming volume for the best poem on the operations of the Glasgow Improvement Trust, has found the following in his letter-box:—

"RESPECTFULLY DEDICATED TO THE MEMBERS OF THE TRUST.

Into every dirty corner
Argus-eyed peep;
With the besom of destruction
Make a clean sweep.
Pull down the rookeries,
The rooks will flee away;
To dismal dirty dungeons
Let in the light of day.
Plan free and open spaces;
Build houses fit for men,
That longer lives—and better—
May bless the 'lower ten.'

AMICUS (¶), HIS MARK."

"PRO BONO PUBLICO.

Plan and build better. The Future's your debtor,
If we live longer, and purer, and stronger.
*** House comforts enhanced, with rents not advanced,
Is a part of the plan of

A CLYDE WORKING MAN."

A NEW ARCADE FOR BIRMINGHAM.

A COMPANY called the Great Western Arcade Company has been formed for the purpose of establishing an arcade between Monmouth-street and Temple-row, Birmingham, and it is calculated that it will be finished by the 1st of March next year. The proposed arcade will run parallel with Bull-street, the one entrance to face the Great Western Hotel, Monmouth-street, and the other the Royal Hotel, Temple-row. From end to end its distance will be about 400 ft., and the extent of the site will allow not only of a causeway 18 ft. wide, but of extensive shop premises on each side, in some cases spacious accommodation for saloons or showrooms being provided. An upper story will contain about forty-four shops, which, with fifty upon the ground-floor, will bring the total number very near a hundred. Along the row of steps on the upper story will go a railed passage about 8 ft. in width. Each of the shops in the building will be fitted with three ebony columns, ornamented in gilt, one to be placed at the limit of the shop, another at its angle, and the third at the doorway. In the centre of the arcade a dome will be erected, its diameter to be nearly 30 ft., and its altitude to be about 70 ft. The illumination of the structure will be by clusters of lamps. Each cluster will comprise four lamps, and over each shop on the upper story these will be placed so as to diffuse the light as much as possible, while the cluster below will droop over the shop front. The arcade will be entered at each end, through arches of about 30 ft. in height, these to be furnished with massive gates. The structure at each extremity will be built in stone in the French-Italian style of architecture. It will be constructed in four stories, and will be surmounted by two towers. The cost of the undertaking is estimated at 60,000*l*. Numerous applications for premises have already been made to the company. Mr. Henry Lovett, of Wolverhampton, has the contract, and Mr. W. H. Ward, of Birmingham, is the architect.

THE NEW RAILWAY STATION, GREAT BERKHAMSTEAD.

THIS station, having a spacious booking-hall, wide subways, and broad platforms, has been opened. There is an entrance corridor of ornamental brickwork, with a projecting verandah. Following the example at Euston, the company's architect, Mr. F. Stansby, has adopted the design of a central hall, which will contain a circular-ended booking department, such as stations of larger size possess. On either side of the hall are waiting-rooms, replete with modern appointments. Emerging from the hall, the passengers pass along the subways lined with white glazed bricks, and thence by flights of York stone steps ascend to the up, down, or intermediate platforms, the last of which is in course of construction. The platforms are one of the chief improvements, inasmuch as in the spaces between them are laid an up and down passenger line, and an up and down goods line, separate and distinct from each other, and intended by the chief engineer, Mr. W. Baker, to obviate the results of mixed goods and passenger traffic. On each of these platforms are retiring-rooms and appurtenances of an improved kind. The engineering portion of the new works has been of a difficult character. A long-spanned riveted girder bridge, of additional width to take the two goods lines (1 ft. 6 in. higher from the ground line than the old cast-iron bridge), has been erected, and gives increased headway for the passage of loaded vehicles. The bridge is of wrought iron, and was erected by Mr. Samuel C. Ridley, of the Bury, Hemel Hempstead, contractor for the fourth line and station works from King's Langley to Bletchley. Among the difficulties encountered was the boggy nature of the soil, which in places involved special treatment with concrete and brick foundations 20 ft. deep. Beneath the heavy retaining wall at the back of the old station embankment a quantity of beech timber,—evidently a portion of the old Castle drawbridge,—was found in a good state of preservation. The old road to Berkhamstead Place, the seat of the Marquis of Hamilton, has been diverted and widened; and a branch into it from the Ashridge New-road has been staked out. A mound, planted with ornamental trees, at the foot of the park serves as a screen from the goods' yard. A permanent suite of waiting-rooms, with octagonal hall and external verandah, has been erected for the special convenience of Earl Brownlow. Of considerable importance are the new goods' shed, yard, and office, in the rear of the up-lines. Goods will be unloaded with ease and safety; accidents, which were of frequent occurrence in crossing trucks over the main passenger lines, will be avoided; and complaints of delay from local wharfingers, coal merchants, and carriers, will, it is hoped, be rare.

IMPROVEMENTS AT KING'S COLLEGE HOSPITAL.

THE following paragraphs, which appeared in the annual report of the Committee of Management of King's College Hospital, adopted at the meeting held in the Board-room under the presidency of the Right Hon. Lord Hatherley, show the nature and extent of the recent improvements carried out at that institution.

"In the month of July last the committee found it absolutely necessary to order a survey of the sanitary arrangements and general state of the hospital buildings, and for that purpose employed Mr. Stephen Salter as their surveyor. In consequence of his report they felt it their duty at once to order the execution of many important repairs and improvements, which have been carried out by Messrs. Holland & Hannen, by contract after tender. The chief of these works were, besides the thorough cleansing of the whole of the hospital (except the principal

staircase), repairing all defective plumbers' work, improving the arrangements of the water-closets and ventilating them, and putting new slop-closets and other conveniences therein; thoroughly examining and repairing the drains, and removing various deposits which had taken place from defective soil-pipes; improving the water supplies towards the kitchen so as to give them a supply independent of all water-closet cisterns; ventilating the post-mortem theatre and mortuary by means of upward shafts to the highest points of the building, and providing galvanised iron fittings in the mortuary; warming the out-patients' waiting-rooms; providing proper basins and supplies to surgeons', physicians', and other rooms, improving the heating of the operating theatre, the chapel of the nurse's dormitories, by altering the system of hot-water piping; providing a disinfecting-room and apparatus; fitting up a room to be used as a delirous patients' ward with all proper appliances; providing speaking-tubes and call-bells from each floor to the hall; providing portable fire-engines and apparatus for the use of the hospital, as recommended by Captain Shaw; besides many other minor works too numerous to mention, but which were found to be necessary.

"The extent of these works will be best understood by the fact that, notwithstanding that they have been carried out in the most economical manner consistent with efficiency, the cost has nearly reached the large sum of 2,500*l.* Towards this sum the committee beg to acknowledge the following munificent donations: viz., Messrs. Childs & Co., 100*l.*; Coutts & Co., 100*l.*; Drummonds, 50*l.*; Gosling & Sharpe, 100*l.*; Hoare & Co., 100*l.*; W. H. Smith & Sons, 100*l.*; Twining & Co., 100*l.*

In order at once to meet the above extraordinary expenditure, to pay off all out-standing liabilities, so as to begin the new year free from debt, and to commence a system of prompt payment of tradesmen, the committee have been reluctantly compelled to entrench upon their slender endowment fund to the extent of 3,500*l.* They believe that the results have fully justified so large an outlay, and they would point with confidence to the present sanitary condition of the hospital, as unsurpassed by any similar institution in the metropolis."

THE WORKS AT ST. MICHAEL'S, OXFORD.

At a meeting of the Oxford Architectural and Historical Society, recently,—

Mr. Bruton described the work which had been done to the tower of St. Michael's Church. He said that on receiving instructions from the feoffees of the parish to report upon the state of the tower, he ascended the chamber where the walls were most cracked at the time the bells were ringing. It was a well-known fact that the ringing of bells caused considerable vibration in a tower, and that of itself was no cause of alarm; but in this case he found the south-east angle of the tower, or the wall between the south-east angle and the centre of the south face, at which points there were large fractures, vibrating at a different rate from the rest of the tower. In this there was great danger, and upon his advice the necessary orders were given to prevent the ringing of the bells. He then designed a plan of tying together the fractured parts of the tower; not by putting bolts through from wall to wall, because in the expansion and contraction of the metal there would be considerable danger, but by a novel arrangement of oak timbers, which he called a cradle, just within the walls, these timbers being festened at their points of junction by cast-iron shoes. The timbers were then bolted to the walls, and thus the amount of expansion and contraction is considerably reduced; particularly as these bolts, being embedded in the walls, would not be so subject to the changes of temperature. He also exhibited a drawing of one of the three ancient windows which had been opened during the progress of the work, which are interesting as being about the earliest work in the county. He showed that they had probably been blocked up through the failure of the capitals of the "baluster" columns, which had broken short through in the middle. The way in which he had secured those capitals he explained, and showed diagrams of the way in which the work was done. He had the arches shored up, and then a small portion of the masonry between them removed, and two pieces of L iron placed back to back, and bolted together. From the bottom flanges he passed bolts through the broken stone capitals, which were thus made rigid and secure; after which the masonry which had been removed was re-set, and the arches restored. When the windows were blocked up, the projecting portions of the capitals in two of the windows had been chopped off. These he had found it necessary to restore, but he had done this by piecing out the old capitals, as he was most anxious to keep the old stones, and there had not been a single stone removed that could in any way be made to perform its office.

Mr. James Parker thought that this was one of the most important finds that had been made in Oxford for some time. The great point about it was that it showed the Roman element as opposed to the Norman.

CHURCHES, DIOCESE OF NORWICH.

In compliance with an address from the House of Lords, Her Majesty the Queen has desired a return to be made of the number of churches, including cathedrals, built or restored at a cost exceeding 500*l.*, since the year 1840, and showing, as far as possible in each case, the expenditure and the sources from which the required sums were derived. The following, according to the *Ipswich Journal*, is a summary of the return from the Diocese of Norwich:—

	No. of Parishes.	Total cost.	From rate estate, or parochial funds, &c.	Voluntary sources.
		£	£	£
Parishes whose return is *nil*	30			
Ditto, ditto, unknown	26			
Ditto, ditto, imperfect	10			
Ditto, ditto, not sent in	102			
Parishes in which the Church has been built or restored at a cost exceeding 500*l.*	396	649,338	81,793	567,545
Parishes in which the Church has been restored at a cost over 100*l.* and under 500*l.*	216	61,375	12,169	49,206
	1,050	710,713	93,962	616,751
Cathedral	...	*17,000	10,000	7,000
Totals	...	727,713	103,962	623,751

THE METROPOLITAN DISTRICT RAILWAY AND THE DEVELOPMENT OF BUILDING IN THE WEST.

It was stated at the half-yearly meeting of the Metropolitan District Railway Company, the other day, that the opening of the Hammersmith extension line has already given a spur to building enterprise in that district, and that a very large and populous neighbourhood is rapidly springing up between Gloucester-road and Hammersmith. The chairman said the construction of buildings on a large scale was going forward near the west end of their line, and as they became occupied would be a considerable source of traffic.

With regard to the sale of the company's surplus lands, it was stated that they had been enabled, during the half-year, to conclude several sales upon terms highly advantageous to the company. The amount realised in the half-year had been 72,081*l.* 18*s.* 3*d.*, and, in addition to these actual realisations, contracts had either been concluded or were pending, under which at least a further 50,000*l.* would be receivable. In all these sales the full estimated value of the lands had been obtained from the purchasers. In answer to a question, the chairman stated that the surplus land on the embankment had been disposed of at a ground-rent of 2,100*l.* per annum, with a right to purchase for 47,000*l.* The St. Stephen's Club was let on the same basis.

A Wedge of Iron in the Great Pyramid.—The *Iron Age* says that a wedge or a plate of iron has been discovered imbedded in the masonry of the Great Pyramid. It shows that this metal was produced and wrought in the age of King Cheops, which is placed by some authorities as far back as 5,400 years ago.

* Approximately divided under the heads given in the return. This sum was almost entirely contributed from the annual income of the Dean and Chapter.

WROXTON ABBEY.

In Skelton's "Oxfordshire," there is an engraving of the hall of this ancient edifice, four miles from Banbury. The view includes the screen, and on the title-page of this work is an engraving of the west front of the mansion. The porch and hall are engraved in Nash's "Mansions of England in the olden Time." The mansion was erected on the site of the ancient priory, A.D. 1618. Beesley, "History of Banbury," pp. 84, 263, A.D. 1841, states that the west front of the edifice extends 118 ft. in length, the porch being a very elegant specimen of the Italian Decorated entrances. The dining-room is stated to be 39ft. 6 in. by 21 ft., decorated with a beautifully enriched ceiling, and the chapel 27 ft. 2 in. by 16 ft. 10 in. This apartment has or had, A.D. 1841, an early Decorated window, of four lights, with foliated circles in the head, and mullions. Mr. Beesley stated, "Over it, on the exterior is an ogee canopy. This end of the chapel has a battlemented parapet, with Decorated cornice mouldings. This portion of the building is of the fourteenth century. In a passage leading to the cellars of the mansion, a doorway of the original edifice has been preserved, of the Early English style which prevailed during the thirteenth century." The window of the chapel was ornamented with stained glass by Van Ling, A.D. 1623, when the owner of the mansion, Sir Thomas Pope, bart., was living. The edifice was erected by this person. The hall, according to Mr. Beesley, measures 45 ft. 3 in. north to south, and 24 ft. 6 in. from east to west, having at the south end a highly-decorated screen of the music-gallery, supported on columns. The Lord Keeper Guilford, who in the reign of Charles II., possessed Wroxton by his union with Lady Frances Pope, daughter and heiress of the third Earl of Downe, added to the mansion. The fourth Earl of Guilford erected the library from a plan by Smirke. This fine old building contains valuable paintings, including one of Sir Thomas Pope by Holbein; one of the first Earl of Downe, by Vansomer; two of the Lord Keeper, by Lely and Riley; also a portrait of Lord North, the Premier, by Dance.

CHR. COOKE.

"SAMARITAN" HOSPITAL, LISBURN-ROAD, BELFAST.

This hospital, now approaching completion, is one of three erected in Belfast, through the liberality of the late Mr. Edward Benn, Glenravel, county Antrim. It is a red brick building, with quoins, strings, and cornice of sandstone of a yellowish tint from Dungannon, county Tyrone. Over the entrance-door there is a niche, in which it is intended to place a statue of the donor. The principal apartments will be heated by Captain Galton's patent ventilating stoves. The total cost of the building, exclusive of fittings, will be 3,300*l.* The work is being carried out by Messrs. Dixon & Co., builders, from the designs and under the superintendence of Mr. Wm. Hastings, architect, Belfast.

IMPREGNATION OF SANDSTONE.

M. Lewin impregnates the sandstone from his large quarries "Saxonia," at Neundorf, near Pirna (Saxony), with a solution of sulphate of alumina, and then with a solution of glass. The impregnated stone may be polished, and a marble-like appearance given to it. It resists fire and atmospheric influences, and is especially suitable for hydraulic works. For stairs it would replace marble on account of its durableness, and it would be preferred to sandstone for the sake of its appearance. If exposed to high temperatures its surface becomes vitrified, and in this process any shade of colour may be given to it.—*Polyt. Notizblatt.*

A Liberal Donor to Church and School. The *Western Morning News* states that, though originally a Dissenter, Mr. S. Marling, the new M.P. for Stroud, has built a new church in his own parish, and endowed it with an income of 200*l.* a year; the hon. gentleman has also built a national schoolroom, a schoolmaster's house, and a parsonage at a cost of 10,000*l.*; he has subscribed 500*l.* towards the schools of another parish, though he has no sympathy with its High Church Vicar's views; he has given 250*l.* to another national school; 2,000*l.* towards the restoration of a church; and 500*l.* towards the restoration of Gloucester Cathedral.

THE QUEEN ANNE STYLE.

SIR,—To whatever extent this style may be destined to be practised (and it is evident some movement of taste in that direction is impending), it is to be hoped that students of architecture will not be persuaded to make an inconsistent and half-formed style a principal object of study. The study of architectural style involves what may be called the logic of design, the distinct relation of one part to another in regard to proportion, expression, and function. It is only where this relation is completely observed and carried out that a complete style is formed, and it is only in the production of such a style that design can be studied with the best advantage in promoting the feeling for grace and refinement, and educating the eye. Now, the Queen Anne style is admitted, even by its upholders, to be an unformed and corrupt style; it has not this kind of logical design which distinguishes a complete style, and therefore its study is no training for the young architect. If he likes to practise it afterwards, let him; but he will not find it wise to try to set up any special proof that this of all others is the style to be sought after, and the natural and right result of that has gone before. The whole thing reminds me of the story of the person who ordered a glass of brandy at an inn, with many explanations and justifications as to its being very cold, not being well, really requiring something of the kind, and so on, when his neighbour, in a defiant tone, ordered a similar glass for himself, "because he liked it." Now, if the truth were told, that is about all which this talk about the necessity and fitness of Queen Anne architecture really comes to. Certain gentlemen have revived that style "because they like it," and no bad reason either; and we have even heard of one enthusiast who had built or rented a Queen Anne house for himself, and persuaded his family to dress in the fashion of that day to be in keeping with the mansion. All this is a very agreeable and perfectly harmless kind of artistic recreation; but an attempt to set it up as the modern philosophy of architecture is apt to become ludicrous. H. S.

EAST LONDON RAILWAY COMPANY'S SURPLUS PROPERTY.

SALE OF HOUSES AND LAND.

LAST week, a large sale of the surplus property of the East London Railway Company took place at the Mart, Tokenhouse-yard, where seventy-five lots were offered, the greatest number of which were sold. The property consisted of dwelling-houses and building land, situated in Rotherhithe and Deptford, intersected by the railway, and under which it passes, together with numerous plots of other building land in Deptford, which has been specially laid out by the company for building purposes. There was a very large attendance of builders and others interested, who kept up an active competition for the several lots submitted. The houses sold were twenty-two in number, with an annual value of from 13*l.* to 19*l.* per annum, and they realised prices varying from 150*l.* to 300*l.* each. A plot of land on the south side of the railway, immediately adjoining the Rotherhithe Station, and containing an area of about 3,000 ft., was sold for 110*l.*, whilst two other lots, immediately over the railway underneath, and containing an area of 3,940 ft. and 5,860 ft. respectively, were sold, the one for 250*l.*, and the other for 310*l.* The first-named lot has a double frontage to Berkeley-street and Albion-street, and the second to Berkeley-street only. A triangular piece of land, with a frontage of 129 ft. to the Lower Deptford-road, and 43 ft. in depth at its widest part, was sold for 210*l.* The entire proceeds of this portion of the sale, consisting of twenty-nine lots in all, amounted to 6,150*l.* It may be stated that the conditions of sale provided for reserving to the company special advantages and stringent protection. They reserve to themselves the surface and subsoil of such of the lots as may be occupied by the railway and works, together with the free and uninterrupted right of entering upon the lots at any time for maintaining and repairing the railway works and tunnels.

The most interesting feature in the sale was the large area of building land, bounded on the north-east side by the company's own railway and on the south-west by the London and Greenwich branch of the South Eastern line. The north-western boundary of this spacious plot of land, all of which is in Kent, divides it from the county of Surrey. It is upwards of 20 acres in extent, and the railway company were compelled to purchase it along with the charcoal manufactory of Messrs. Torr & Co., which has been demolished, and the site of which is now occupied by the railway. The whole of this estate, which was formerly meadow-land, has been drained, and laid out by the railway company for building purposes. Five roads, named respectively Oldfield-road, Alpine-road, Fawcett-road, Cornbury-road, and Reculver-road, have been formed. These roads are each 40 ft. wide, with an average length of about 900 ft. At the extreme east end of the estate three other similar roads are in course of formation. The plots of building land on the estate submitted on Tuesday were thirty-five in number, having an average frontage of 96 ft. in length, with a depth of 65 ft., and it is understood that about six houses will be erected on each plot. At the north-west angle of the estate, running parallel with the railway, and fronting Oldfield-road, there is a plot 415 ft. in length, with an average depth of about 70 ft., and for this plot there was an active competition, the lot being put up at 300*l.* and sold for 1,270*l.* Six of the other lots were knocked down at prices ranging from 220*l.* to 300*l.* The rest of the lots were withdrawn, but it is confidently expected that they will readily be sold by private treaty, and that the whole of the estate will shortly be built upon, the estimated number of houses being upwards of 400.

The entire proceeds of the day's sale amounted to 9,200*l.*

BRECHIN'S HOUSEHOLD HEAT ECONOMISER.

THE arrangement patented consists in what the inventor calls an "econ" (a disc of metal), which is fastened to the wall of the apartment above the fireplace or stove, and in a line with the flue. It projects about 7 in., and has 3 in. of space between it and the wall. The fastening is accomplished internally by simple means, and when once in position the apparatus may remain for an indefinite number of years. Two openings or passages are formed in the wall through which two tubes pass and connect the econ with the flue, while a valve, or damper, working through a flange on the lower tube closes and opens the flue at pleasure.

On the fire being lighted the heat and fire gases ascending the flue pass through the lower tube and are projected against the thin steel or copper front of the econ, heating it at a ratio proportionate to the heat generated by the fire; this may be from 70° or 80° to 130° or more. That portion of the heat which does not at first permeate the steel circulates within the econ and warms the back and sides before passing by the higher tube into the flue again. The econ is circular, 29 in. diameter and 4 in. deep, so that the front, sides, and back represent a surface of about 10 square feet which radiates heat, and as it is air-tight, says the inventor, under no circumstances can other than unalloyed caloric be diffused by it. Of course, this warming power does not cost anything beyond the price of the econ. It is proposed, by attaching econs to the flue, to warm a sitting-room on the first floor, a library or nursery on the second, and a bed-room on the third. The bed-room of course in a less degree than the library, and the library than the sitting-room. In dwellings having dividing walls in which the flues are built the fire-places are situated back to back; this allows of the fire being in one room and the econ in that adjoining, the latter being the better warmed of the two.

Memorial of the late Rev. J. S. Gibney. A meeting was held in the Guildhall, Lincoln, on the 11th inst., for the purpose of raising funds to found a studentship in connexion with the School of Art, in memory of the late Rev. J. S. Gibney, who lost his life a short time ago under melancholy circumstances. The Dean was called to the chair, and the following resolutions were adopted:—"That it is desirable to establish an exhibition or studentship to be called the Gibney Studentship, in connexion with the Lincoln School of Art, as a memorial of the late Rev. J. S. Gibney, the founder and one of the chief supporters of the School"; and "That the main object of the Gibney Studentship shall be to enable youths who may exhibit a special talent for art to devote one or two years exclusively to its cultivation." At the close of the meeting the Dean announced that subscriptions had been promised to the amount of 200*l.*

SCHOOL BUILDING NEWS.

Penzance.—We briefly noticed recently the laying of the foundation of the new schools in connexion with St. Paul's Church, and now give details. The ground, situated in the Taroveor-road, is the gift of the late Miss Elizabeth Carne, after whom the schools are named the "Elizabeth National Schools." The plans have been prepared by Messrs. Trounson & Son, and contemplate a cost of about 1,000*l.* The building, and the open space between it and Taroveor-road, will occupy 135 ft. from north to south, and 80 ft. east and west. From the road it will be reached by a gradual ascent, which will bring the scholars to the girls' school-room on the left-hand side, 40 ft. by 20 ft. and 14½ ft to the collar-beam, with an adjacent class-room 18 ft. by 20 ft. This constitutes the left wing of the building, and is reached by a porch which projects 8 ft. from the front of the wing. A similar porch is seen on the right-hand side of the edifice, and this opens directly into the infants' school-room, 56 ft. by 20 ft. and 14½ ft. This will be lighted by two front, one large east, and three back windows. Attached to this apartment will be a class-room, 18 ft. by 15 ft. Each class-room is lighted by a window. There are separate lavatories for teachers and for the elder and the young pupils. The walls are of rough nobbing, with granite dressings, and a small bell-turret will break the uniformity of the ridge of the main roof. Ventilation is provided, and each regulation of the Education Committee in London is complied with. 150 infants and 100 girls can be taught in the Elizabeth Schools.

Taunton.—The new schools, built at Rowbarton, near Taunton, through the liberality of the Rev. F. J. Smith, have been opened. They have been erected from the designs by Mr. J. Houghton Spencer, architect, Taunton; the contract being undertaken by Mr. John Macey, builder, Bishop's Hull. It was originally intended to constitute a class-room of the west end of the building, convertible on Sundays into a chancel, but this plan was abandoned, and the interior now consists of one room, measuring 70 ft. by 20 ft.; the elevation being 12 ft. 6 in. from the floor to the wall-plate, and 27 ft. to the point of the roof, which latter is of open timber-work, varnished, with ventilators under the eaves. The greatest length is from west to east, with gable ends, in each of which is an elliptic-arched window; the point in the ellipse being of masonry. The front to the south is relieved by a porch, measuring 7 ft. by 7 ft. 3 in. at the lower or eastern corner; a gabled elevation dividing the remainder of the frontage into three equal proportions, each bearing two double-light windows. At the rear of the block are the necessary sanitary conveniences of the scholars. The material employed is the Monkton stone with dressing of grey brick; Ham stone being utilised in the masonry of the windows, and the whole building is roofed with tiles of two patterns. Accommodation is provided for 175 children.

Sileby.—The new infant school in connexion with the parish church has been opened. The schools, the memorial stone of which was laid on the 5th of August last, are in close proximity to the existing boys' and girls' schools, and the style of architecture is in unison with that building. Mr. Henry Black, of Barrow-on-Soar, is the builder. The cost is about 430*l.* The outer walls are constructed of Mountsorrel granite, with Portland stone dressings to the windows and doorway. The building is 35 ft. long by 22 ft. 3 in. wide, and is calculated to accommodate about 110 children.

Armley.—The old school premises having had to be vacated at Christmas last, rooms at Strawberry House and the Temperance Hall have since been rented for day and Sunday schools respectively. This arrangement, however, being unsatisfactory, in view of the fact that over 300 scholars are upon the books, a plot of land, situated a little to the south-east of the new church now in course of erection, was secured, and the first stone of the new schools has been laid, the ceremony being performed by Mrs. William Whiteley, of Butt's Cottage. The building will comprise a room, 76 ft. by 30 ft., and two class-rooms, each 22 ft. by 16 ft. The cost will be upwards of 1,000*l.* It will be erected of brick, with stone dressings, and will front the new church. The assembly-room will seat about 500 people; and will be also used for lectures and general purposes. The architects are Messrs. Walker & Athron, of Leeds.

Kettering.—The foundation-stone of the new Wesleyan schools have been laid by Mr. Tordoff. There being some difficulty in obtaining a site, Mr. Tordoff, who contributed 1,000*l.* towards the erection of the new chapel in 1866, offered not only to give a site, but to defray the whole cost of the erection of the schools. The schools stand in a field in School-lane; the area covered is 80 ft. by 44 ft. The building will be of red brick, with Bath stone dressings, and the style of the frontage will be Gothic. The class-rooms will be 13 ft. by 12 ft., and the library, also on the floor, 10 ft. by 12 ft. The infants' room will be 30 ft. by 18 ft., adjoining which is to be a class-room, 18 ft. by 10 ft. Two staircases will lead from the lobby to the large school-room (60 ft. by 30 ft.) over, and adjoining this room is to be another class-room similar to the one for the infants. The rooms on the ground-floor are to be 13 ft. in height, and from the floor of the large school-room to the pitch in the roof, 26 ft. The roof will be an open timber one, with pitch-pine moulded and carved ribs. The building will be heated with hot-water pipes. Mr. Sharman, of Wellingborough, is the architect; and the erection has been entrusted to Mr. Coltman (mason); Mr. Samuel Manby (carpenter); Mr. John Payne (plumber, &c.); Mr. T. Heighton doing the gas-fitting, hot-water apparatus, and also acting as clerk of the works. The cost of the building is estimated at 1,500*l.* The furnishing of the schools, together with the enfranchisement and alteration of the old school premises, will amount to about 300*l.*

CHURCH BUILDING NEWS.

Bathwick (*Bath*).—For some years past the rector and churchwardens of St. Mary's, Bathwick, Bath, have felt the need of the addition of a chancel to the parish church. On the 7th of October, 1873, the foundation was laid by the Rev. Prebendary Scarth, formerly rector of the parish. The work was placed in the hands of Mr. G. Mann, contractor, and has been so far completed that the new chancel has been consecrated by the bishop of the diocese. The chancel is about 30 ft. in length, of corresponding width, and of imposing height and design. The roof is of open woodwork, and the floor a tesselated pavement. An east window, designed and executed by Messrs. Clayton & Bell, has also been added to the church, through the munificence of Mrs. Roscoe, of Cleveland-walk, Bath. It has seven lights, of which the upper contains emblems of the Virgin, and the lower six present scenes in the life of the Saviour. The cost of the completed additions has amounted to about 2,300*l.*, and 800*l.* more are needed for the organ-chamber, vestry, and reredos, which it is hoped to include in the list of improvements before the works are completed.

Wath (*near Ripon*). — This ancient parish church has been re-opened by the Bishop of Ripon. The church is dedicated to St. Mary the Virgin, but in pre-Norman times there appears to have been an earlier structure dedicated to St. Oswald. The reparation of the fabric was commenced in 1873, and has been conducted in accordance with the strictest conservative principles, every feature and detail of the old times having been most carefully retained. The ancient walls have been left untouched, and a few new windows only have replaced those which were too dilapidated to be repaired. The work has been executed under the superintendence of Mr. Edward Birchall, of Leeds, architect, and Messrs. James Trees & Son, of Ripon, were the builders.

Corscome.—The parish church is about to undergo restoration at a cost of about 2,000*l.*, the greater part of which has been already subscribed. The present building, which is now in a bad state of repair, dates from the early part of the fifteenth century, but the tower and porch are much earlier. An unsightly gallery, stretching across the west end of the church, completely marring the original design, is to be removed, and the edifice lengthened sufficiently to make up for the accommodation it affords and about thirty additional seats. Mr. Allen, of Crewkerne, is the architect.

Wimborne.—A commodious church is about to be erected on a site near the railway station, for the accommodation of the inhabitants of the New Borough and Leigh. We hear the site has been given by the trustees of the Dean's Court estate.

Strubby (*Alford*).—St. Oswald's Church, consisting of nave and south aisle, was rebuilt about the year 1856, at the cost of about 800*l.* The south porch was added some years after. The structure is built of sandstone and brick. The interior of the nave consists of four bays. The pillars are original, of the Early English style. The seats are of stained deal. The floor is laid with plain chocolate and red tiles. The font is octagonal, with the original tracery on the panels in good preservation. The chancel being dilapidated, the Ecclesiastical Commissioners for England and Wales resolved to rebuild it, the restoration of which was completed in December last. Mr. E. Christian was the architect; the contractors were Messrs. Huddleston & Son, Lincoln. The exterior walls are of Lincoln stone and brick in courses, roofed with Staffordshire tiles, the east end surmounted by a Greek cross; the interior of the roof is open and of stained deal; the floor is laid with chocolate and red tiles, bordered and studded with coloured glazed ditto. The oak seats are open, with carved backs and heads, the latter being the original design of the Tudor rose, one of which still remains; the altar-rail is of oak, supported by light iron standards, coloured and gilt; and the new altar is also of oak, raised upon a footpace; the east window is in three compartments, with head tracery; the south window is in two compartments, fitted with Pepper's improved patent ventilator. The whole cost of the new chancel is about 430*l.* At the north side has been erected a small vestry in character with the other parts of the church.

Plymouth.—A church is about to be erected at Tothill, in the new district of St. Jude, from the designs of Mr. James Hine, architect.

Hadnal.—The parish church of this village has been re-opened, after restoration and enlargement. The church is of ancient date, and its nave was opened, after restoration and reseating, in January, 1873. The sacred edifice has been further improved by the addition of a chancel, with vestry and organ chambers, built of the yellow Grinshill stone, relieved with red stone in arches; the interior being ashlared, also in Grinshill stone. A wide arch has been put in at the east end of the nave, and the old east window is now refixed in the new chancel gable. The west gallery has been taken down, and the tower, underneath which is the vault of the late Lord Hill, provided with a new arch, is now thrown into the church, and used as a baptistery. The warming apparatus was provided by Mr. W. Dodwell, and Mr. G. Landucci executed the carving. The chancel stalls and other fittings are of pitch pine. The restoration and enlargement have been carried out by Messrs. Powell & Co., Prees, under the direction of Mr. Haycock, of Shrewsbury, architect.

Cotham (*Bristol*).—St. Nathanael's Church, the foundation-stone of which was laid some three years ago, has been consecrated by the Bishop of Gloucester and Bristol. St. Nathanael's will be a district church attached to St. Matthew's, Kingsdown. The latter parish has grown so rapidly that a second edifice was rendered necessary. This church occupies a site at the corner of Lower Redland and Elmgrove roads, Cotham. The style of architecture is Early Pointed, the exterior walls being of Pennant stone, with Bath stone dressings, freely used. The sides of the wall are broken with buttresses; the roof is of slate, and each of the gables is surmounted by a cross. The front is principally of Bath stone, the columns of the arch being of rubbed Mansfield and Pennant stone, with foliated capitals and label terminations. The interior consists of nave, north and south aisles, apsidal chancel, with organ chamber on the north side, and vestries for the clergy and the choir on the south. From wall to wall the width of the nave and aisle is 57 ft., and the length from the chancel to the western extremity is 80 ft., while from the floor to the apex of the roof the height is 51 ft. The chancel is 34 ft. long, by 21 ft. wide, and 37 ft. high. The chancel arch is supported by Mansfield shafts, with carved capitals and enriched corbels. The chancel itself has a bordered dome-like roof, and is lighted by five two-light windows, the heads of which are filled with antique glass, the gift of the architect, while the lower part is filled with rolled cathedral glass. The roof is of plain deal, slightly stained. The nave is divided from the aisles on either side by six arches, supported on stone columns, with carved caps. The roof of the nave and aisles is open timbered, slightly stained. The principals are supported on the columns which divide the clearstory into bays. The nave is lighted by two-light windows on either side, facing the six bays, and by the clearstory windows. These are all filled with cathedral glass. The west window is 20 ft. high and 12 ft. wide, and is divided into mullions of five lights, in geometric pattern. The church is paved throughout with tile, that in the chancel being rather more ornamental than the rest. The church is to be warmed by one of the heating apparatuses of Messrs. Haden & Sons, of Trowbridge. The carving has been executed by Mr. Sheppard, of Bristol. The builders are Messrs. Wilkins & Sons, Bristol. The architect is Mr. J. Bevan. The cost has been about 6,000*l.*, including the purchase of the land.

Armley.—The friends of the Church resident in the rapidly-growing parish of St. Bartholomew's, Armley, Yorkshire, have for some time past felt the need of a church of larger proportions than the one in which divine service is now held. This has been well nigh overcome, for, on an elevated plot of ground to the south-east of the old church, an edifice is being erected which will accommodate double the number of the present church. This structure, which, it is anticipated, will be completed next autumn, is of stone, freely ornamented, is in the cathedral shape, and will, it is said, architecturally considered, be an ornament to the neighbourhood. A tower is to be added at some future time, and the whole undertaking will involve an outlay of over 20,000*l.* Subscriptions amounting to 13,000*l.* have been promised. The architects are Messrs. Walker & Athron, of Leeds.

Dorchester. — The Building Committee of Holy Trinity Church met last week, the rector (the Rev. H. Everett) in the chair. The meeting was attended by the architect, Mr. Ferrey, of London, who explained several details; and these having been discussed, the plans were ultimately approved and settled. It was decided to hand over the present building to the contractors on the 1st of March. The works in connexion with the new church will occupy at least twelve months.

Overtown (*Scotland*).—The new church for the Overtown congregation, which has been in progress for the last twelve months, has been opened for public worship. In the belfry is a fine bronze bell, the gift of Mr. John M. Mackenzie, of Morinish, from the foundry of Messrs. Mears, Whitechapel, London. The height of the tower, including the roof, is 80 ft. The roof of the church is of open timber work. Mr. William Hay, of Edinburgh, is the architect. The building, which can hold 600 persons, has cost above 2,000*l.*

Owlpen (*Gloucestershire*).—This church has been reconstructed by the Bishop of the diocese, after having been restored. About three years ago, Owlpen became disunited from Newington Bagpath, and was annexed to the rectory of Uley, so it now stands "Uley cum Owlpen." The church was built about fifty years since, and replaced an older building. The nave, 37 ft. by 27 ft., is wide and in bad proportion, with a flat ceiling, and lighted by so-called two-light lancet windows, and there was no chancel; but a vestry, 11 ft. by 9 ft., projected from the east wall of the nave, the tablets on which the commandments were written formed the door from it to the nave, so that the priest could only enter the church by "breaking the whole of the commandments." The prayer-desk and pulpit were placed about the centre of the church against the north wall, to which all the sittings faced; and there was a small west gallery. A meagre tower, 36 ft. high, and 8 ft. by 7 ft., is placed at the west end, but from this into the church there is no opening. To this building has now been added a buttressed apsidal chancel, 27 ft. 6 in. long by 17 ft. wide, and 16 ft. high to the plate; with an open timber-roof, covered with the local stone tiles. The east wall of the nave has been pierced with a chancel-arch of two orders, 18 ft. high and 15 ft. wide. On the north side of the chancel there is a vestry, 13 ft. 6 in. by 10 ft., a portion of which is screened off for the organ. The chancel is lighted by single-light windows, one in each side of the apse, and two in the south wall. The vestry has a three-light window under the north gable, and a small door in the east wall. The fittings of the chancel are of oak, and the floor is paved with glazed encaustic tiles by Godwin. The nave has been reseated with open benches of pitch-pine, and the passages tiled. The church is warmed by an apparatus supplied by Rimington & Son, of Skipton, Yorkshire. Mr. J. P. St. Aubyn, of London, was the architect; and Mr. Clutterbuck, of Gloucester, the builder.

THE NEW FOUNTAIN IN PARK LANE.

THE munificence of the late Mrs. Browne, in providing funds for a fountain to be erected at the junction of Hamilton-place and Park-lane, will soon bear its fruit. The commission to execute this work was awarded to Mr. Thomas Thornycroft, who, seizing at once the requirements of the locality, conceived the idea of a triple-fronted design, rising pyramidally from a basin of polished granite, and determined at the same time to take the initative in commemorating our noble poets by statues in the metropolis. The pedestal immediately above the polished granite basin will be ornamented with seated bronze figures of Tragedy, Comedy, and History, so arranged that those of Tragedy and Comedy will flank Shakspeare; those of Comedy and History, Chaucer; and those of Tragedy and History, Milton. The central and most important story in the design will be embellished with white marble statues, of heroic size, of Shakspeare, Chaucer, and Milton. From their midst, and slightly rising above them springs a column, over which flutters a gilt bronze figure of Fame. This fountain promises to be a great ornament of the metropolis, not only by the agreeable novelty in its design, but on account of the artistic quality of the sculpture which adorns it.

THE INSTITUTE MEETINGS.

COMPLAINTS of want of punctuality and system in the conduct of the ordinary meetings of the Institute of Architects have reached us so often and from so many quarters during some little time past, that it becomes almost a duty to say a word in regard to a deficiency which seems to increase rather than diminish, but which it certainly appears quite possible, and indeed easy to remedy.

In regard to the question of punctuality in commencing the meetings there is a defect in the provisions of the bye-laws, which do not absolutely require that the chair shall be taken at eight o'clock, but "as soon after eight as there shall be five Fellows present." This is a mistake in the letter of the law, for to keep a large institution of this kind in regular working order it is really necessary that a fixed time should be stated and kept to. Whether it is under this rule that the frequent delays in taking the chair, of which we hear complaints, are condoned, we know not; but if so, the executive of the Institute must not be surprised if these delays are made a subject of comment, inasmuch as we are pretty certain that the majority of members and all the visitors are under the impression that eight o'clock is the time fixed according to the law of the Medes and Persians, and that, therefore, they have a just right to complain when twenty minutes or half an hour is let slip. And in the case when as many as five Fellows are present at eight, of course this rule is binding as to time. There should be a distinct understanding at what minute the chair will be taken, as there is at all other such meetings that we know of. To ensure this, it is only necessary that the secretary, as the working manager of the meeting, should be empowered to keep the time, and that his time should be adhered to. Of course, at a council meeting, where it is no one's business to remember the time, it is likely to be forgotten. A little more method is all that is required to amend a grievance which seems to be becoming "chronic" in more than one sense.

The non-attendance of leading members is a matter which we fear can only be dealt with by providing meetings at which it is worth while for them to attend; at least, this would throw the onus upon the shoulders of the absentees, which in every case it is not at present. But the formal attendance at the Council business of members who subsequently are seen to glide adroitly from the room as the paper of the evening is commenced, is a kind of proceeding which, if systematic, betrays a great want of *esprit de corps*, and of due consideration for the welfare of the Institute, as well as of courtesy towards the lecturer of the evening. Such a drawback is not to be met in any way but by an appeal to the spirit and good feeling of those whose presence would add to the *prestige* and interest of the meetings, and serve again to draw others to them. The lesser lights of the profession, and especially country members who may come up, are glad to have an opportunity of hearing the opinions of its leading and most successful members upon questions of practical or artistic importance. It is certainly disheartening if such visitors attend to find no one present whose opinion they could regard as of any more weight than their own.

Another defect in the bye laws is that no time is fixed for the cutting short of preliminary discussion and proceeding to the main business of the evening. The bye-laws contain a stipulation that "no new matter shall be brought forward after half-past nine o'clock," but this in no way protects the reader of a perhaps elaborate and carefully prepared paper from being delayed in commencing till so late an hour that he has to hurry through his remarks and omit passages in deference to the feeling of an audience who are occupied in an intermittent examination of their watches. Of course meetings solely for discussion, when there is plenty to discuss, may be very interesting and useful, and are found so not infrequently; but where a paper of any extent forms the advertised business of the evening, there ought to be a definite understanding that desultory talk and discussion are not to be prolonged beyond a certain minute—say a quarter before nine *at the latest*. We said "desultory talk," but that phrase touches upon another frequent subject of complaint. There ought to be no "desultory" talk, and we suspect there is a great deal. People may say, why have meetings formal and solemn in character? Why cannot architects just meet in a friendly way to discuss professional subjects, &c.? To which we can only say, what all experience shows, that meetings of this kind can do no good and serve no definite end unless they are carried on in a systematic and well-ordered manner. Architects in conclave are, we have observed, a race of beings peculiarly apt to wander from the point in speaking, and presidents seem to be equally apt to let them do so. What we have heard on one or two occasions prepares us to credit any complaints on this score. There ought to be a courteous but firm hold on the reins in all such cases by the occupant of the presidential chair, especially in regard to persons who labour under a predisposition to listen to the sound of their own voices. Every society of the kind has, it is true, its one or two or more speaking members; persons who generally have something to say more or less to the point, and who possess the fortunate power of saying it fluently and well. They are invaluable at meetings in keeping the ball going; the only drawback to their usefulness is, that they get to be depended upon a little too much by others. At all meetings of the kind there are also those who combine the same ingenuous love of the sound of their own voices with an inability either to speak fluently or to keep to the point. It rests with the proper authority to see that the meetings are not rendered dull and distasteful to others by too lenient a sway in controlling the discussions.

It is not in any fault-finding spirit, as may be supposed, that we make these few remarks on a subject which has been forced upon our notice. But we think that a certain dissatisfaction with the conduct of the meetings, which evidently does prevail, might to a great extent be disarmed or obviated by a little more system and method in regard to some points which may seem small in themselves, but which are found by experience considerably to affect the practical working of an institution of this kind.

THE ELECTRIC ROOM AT THE NEW OPERA, PARIS.

THIS room is described and illustrated in *Nature* for March 11th. The arrangement has been organised by M. Duboscq. The electric light may be thrown upon the magnificent stage by means of a Bunsen battery of 360 elements, which is established in a room on the ground-floor, the length of which is not less than 7 mètres. M. Duboscq has here arranged six tables, of 2·75 mètres long by ·75 mètre broad, which each support a Bunsen battery of sixty elements. This battery is placed upon the table, which is made of very thick unpolished glass, that cannot be injured by the acids. The elements are arranged in four rows of fifteen each. The table is provided underneath with a board, which supports a large rectangular basin, in which the plates are placed after they have been used. The jars of the battery, filled with nitric acid, are, after being used, placed in a tub, containing the acid, and closed with a wooden lid.

In order to work a battery of such power under favourable conditions, M. Duboscq has had to make special arrangements for the preparation of the sulphuric acid liquid, as well as for the zinc amalgams necessary to put the system of batteries in action.

Each table, as we have said, forms a battery of sixty elements. The electric wires are conducted along the wall, at the bottom of the room, where they traverse six galvanometers. Each of these galvanometers indicates, by means of the needle with which it is provided, the condition of the battery to which it corresponds. The six isolating-wires, after leaving the six galvanometers, pass along the walls to the stage, where the currents which they carry may be utilised, either singly or by twos or threes, according to the degree of intensity which it is wished to give to the light. The distance which the current runs from the electric room to the most distant point of the stage is about 122 mètres; the total length of all the wires is about 1,200 mètres.

M. Duboscq, imitating the systems of telegraphic wires, makes use of the earth as a return current; one of the poles of each battery is in communication with the iron of the building. Without this arrangement it would have been necessary to double the length of the wires.

In most instances M. Duboscq places his electric lamp on one of the wooden galleries which run along the higher regions of the scenery above the stage. It is from this artificial sky that he, a new Phœbus, darts upon the nymphs of the ballet the rays of his electric sun. It is from here, decomposing the light by means of the vapour of water, he throws upon the stage a veritable rainbow, as in "Moses"; again, it is thus that he causes the light from the painted windows to fall upon the flags of the church where Margaret is in the clutches of remorse. Sometimes the electric apparatus is placed on a level with the stage, when it is sought to produce certain special effects, such as that of the fountain of wine in Gounod's opera. The lime-light is also used to produce certain brilliant effects in the new opera.

A TALL CHIMNEY.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.

THE following is a brief abstract of a paper communicated by Mr. R. M. Bancroft, of the Engineers' Staff, Great Northern Railway, to this society, on the "Tallest Chimney in the World."

The tallest chimney in the world is the well-known Townsend's chimney, Port Dundas, Glasgow. It was built by Mr. Robert Corbett, Duke-street, Glasgow, for Mr. Joseph Townsend, Crawford-street Chemical Works. The total height from the foundation to the top of coping is 468 ft., and from ground-line to summit 454 ft.; the outside diameter at foundation being 50 ft., at ground surface 32 ft., and at top of coping 12 ft. 8 in.

The number of bricks used in the erection was as follows:—Common bricks in chimney, 1,142,532; composition and fire bricks for inside cone, 157,468; common bricks for flues, &c., 100,000; total number of bricks used, 1,400,000. The weight of bricks used, at five tons per 1,000, is equal to 7,000 tons.

For many days after the chimney was finished, Mr. Townsend invited the public to go to the top. Thousands availed themselves of the opportunity, two persons going at a time, on a small platform, with cross bar in centre, to hold on with the hands. There were always four persons at the top, and two going up; when they arrived, two came down to make room for the next pair.

The writer described the shaft as a masterpiece of chimney-building.

CLEVELAND SLAG WORKING COMPANY.

ACCORDING to the report read at the first annual meeting of this company (formed for the purpose of utilising blast furnace slag),—

"A factory has been built in accordance with the plans of your engineer, which, while providing ample accommodation for the additional machinery which will ultimately be repaired, furnishes conclusive evidence that the materials supplied by the company are both durable and economical.

The machinery (engine, mortar-mills, &c.) is of the most approved description, and well suited to the different purposes to which it is applied. The brick press of Messrs. Bodmer & Company, though not yet in proper working

order, has produced about 70,000 bricks, which, as far as it has been possible to test them, appear to give satisfaction. The press is defective in pumping power, and in other respects, which the patentees have agreed to remedy, and when it has been worked for some time by them, with the guaranteed results, it will be taken over by the company. A second press, from plans by your engineer, is in course of construction; and it is expected, when both presses are in operation, that at least 120,000 bricks per week will be produced.

At an earlier period than was contemplated, your directors saw it to be desirable to commence manufacturing mortar, cement, and concrete, and they have supplied the contractors for the new railway station at Middlesbrough, and others, all of whom have expressed themselves as satisfied with the materials. The prices obtained show a substantial profit on the necessarily limited turn-over, which has been carried forward."

LANDLORD AND TENANT.

THE first of the batch of cases arising out of the gunpowder explosion in Regent's Park in October last came before Mr. Serjeant Wheeler in the Marylebone County Court. Mr. Wood, solicitor, was for the plaintiff, and Mr. Hume Williams for the defendants.

The plaintiff, Mr. Clarke, owns the house 9, Tichfield-terrace, Regent's Park, of which the defendant, Mr. Surison, was the tenant. The house had been held under a lease at a rental of 65*l.* a year. The lease expired at Christmas, 1873, since which time the defendant had continued in occupation as a yearly tenant. On the morning of the 2nd of October last, owing to the fearful explosion on the Regent's Canal, the house in question was blown nearly to pieces and rendered uninhabitable. The defendant left the house and sent the key to the agent for the property, stating the circumstances under which he left the premises, promising to forward the quarter's rent due. On the 17th of October the plaintiff told the defendant he should hold him responsible for the rent during the time the house was being repaired. The defendant denied his responsibility, and hence the present action.

For the defence it was argued that the house after the explosion was uninhabitable, and that possession had been surrendered by the plaintiff's accepting the key of the house.

The Judge held that the fact of the plaintiff's accepting the key, although it was the symbol of possession, did not prejudice his claim upon the defendant, because the possession of the key was necessary for the carrying out of the repairs. His judgment would be for the plaintiff, with costs.

ARTIFICIAL SKATING-GROUND.

SIR,—In reply to "Vortex" inquiring for the best material to form the floor of a skating-rink, allow me to say that, after every inquiry and consideration, the proprietors of the rink at Worthing decided to adopt asphalte, which has been laid by the Société Française des Asphaltes. Should "Vortex" think it worth while to inspect this work, I think it would satisfy him that pure natural rock asphalte is the most suitable material for the purpose he requires.

WORTHING.

The inventors and producers of the new cement floors, such as that at Prince's Ground, claim that these are rapidly superseding all others, and "thoroughly fulfil the necessary requirements."

MASTERS AND MEN.

AT the Middlesex County Court, Whitehead's-grove, Chelsea, before Mr. Serjeant Wheeler, the case of Halse and Aggett *v.* Thorn, builder, Cremorne Wharf, Chelsea, was heard. The amount claimed was for one hour and a half's pay, at 9d. per hour, in lieu of notice, they being discharged at half-past eleven on January 16th.

Mr. Newman appeared for Thorn. The plaintiffs called several witnesses to prove that it was the custom of the trade to be paid for the two hours in lieu of notice.

The attorney for the defendant desired to be non-suited, as it was no use to contend against the weight of evidence before the Court.

The Judge remarked that he should have required some good arguments indeed why the men should not either have the two hours' notice or the two hours' pay, as it was clearly shown to him that it was essential they should have it.

Verdict for the plaintiffs, 1s. 1d., the amount claimed, and 16s. 6d. costs each case.—*Beehive.*

COST OF HOUSE CARPENTRY 400 YEARS AGO.

AMONGST the ancient manuscripts belonging to Mr. H. T. Wake, bookseller, of Cockermouth, is one, the contents of which afford a striking contrast with the present prices of labour and materials. The document is beautifully written on vellum, and is in fine preservation. We print it *verbatim*, with the orthography modernised, and a few words, within brackets, added in explanation of some terms that, during the lapse of time, have become obsolete. The date of the MS. is 1472, and it is as follows:—

"This indenture made between Alice Chester of Bristol, widow, some time the wife of Harry Chester of Bristol, draper on the one party and Stephen Morgan of Bristol, carpenter, on the other party, witnesseth that the said Stephens hath convenanted with the same Alice and him bindeth by these presents to make well, workmanly, and surely of good timber and boards a new House, in the High Street of Bristol with floors, windows, doors and partitions and all other things of timber work belonging to the same house except laths and latticos, which said new house shall be set between the tenement called the Bull on the one party and the tenement in which one John a* Cork, Corviser [cordwainer or shoemaker] now dwelleth in on the other party, containing in length 19 feet and 5 inches of size and in wideness 10 feet and 4 inches; and the said Stephen shall make in the said a shop, a hall above the same with an oriel [bay window], a chamber above the hall with an oriel and another chamber above that by the feast of the Annunciation of our lady next coming for which house so to be made by the same Stephen the said Alice Granteth and her bindeth by this present [writing] to pay unto the said Stephen £3. 18s. 4d. sterling, that is to say, at feast of the Nativity of our Lord next coming £3, at flooring of the said house 33s. 4d., and at end of the same work 4*l*s. Also it is accorded that it shall be lawful to the same Stephen to have and take as his own all the old timber of the said old house without any gainsaying of the same Alice or any other for her or in her name. In witness thereof the parties aforesaid to these indentures interchangeably have set their seals. Given the 17th day of the month of November, in the 12th year of the reign of King Edward the fourth.—Hardyng."

Hardyng would probably be the name of the attorney who drew up the agreement. The seal bears the impression of a sword and a large Gothic capital I.—*Hereford Times.*

* The "a" in this case signifies "*of*," and means John of Cork.

"GRINDING MONEY."

A COMMITTEE of the Central Association of Master Builders of London have had under consideration a letter from the Carpenters and Joiners' Society, in respect of what is called grinding money. They say,—

"As one of the primary objects of this Association is 'unity of action in the settlement of all questions arising between employers and their workmen,' your committee have deemed it desirable to make inquiries as to this matter, and find that there is no *general custom* in the trade. Some employers allow two hours' time or pay for grinding tools, some one hour, and some no time at all. Your committee have therefore taken the matter into consideration, with a view of suggesting a rational and fair arrangement for the guidance of the trade. It seems that the two hours frequently allowed is more than necessary. A joiner should always have his tools in fair condition; and, in practice, it is found that the two hours, when allowed, is not needed, or used, for the purpose named. Your committee are therefore of opinion that if a carpenter or joiner be allowed one hour for the purpose of sharpening, cleaning, and packing up his tools, on being discharged, it would be perfectly just; but such allowance should not be made to a man discharging himself, or bing discharged for misconduct."

STAINED GLASS.

Lincoln.—A stained glass window has recently been placed in the south wall of the church of St. Peter in Eastgate to the memory of Mary Moor (widow of a former incumbent of the parish), and also of her father and mother, John and Eleanor Penelope Fardell. The series of pictorial illustrations of the chief events in the earthly life of our Lord is now completed. The window lately erected contains six medallions, representing "The Annunciation," "The Birth," "The Adoration of the Magi," "The Flight into Egypt," "Our Lord in the Temple with the Doctors," and "His Subjection to His Parents." The next window, placed to the memory of Harriott Stapylton Smith, daughter of the late Mr. Burton, has the following subjects, viz., "The Temptation," "The Call of Simon and Andrew," "The Cleansing of the Temple," and "The Sermon on the Mount." The history is continued on the third window. This was placed to the memory of Charles Ward and his daughter Mary Agnes, and represents "Our Lord's Commission to His Apostles," "His Praying in the Wilderness," "His Teaching in a Synagogue," "The Transfiguration," "The Woman anointing His Feet," and "His weeping over Jerusalem." The east window, erected in memory of the last Incumbent by his brother, carries on the life from the "Entry into Jerusalem," through the "Last Supper," and "The Betrayal," until we are brought to the closing scene of the "Crucifixion," and two more medallions set before us, "The Resurrection" and "The Ascension." The windows already erected are the work of Messrs. Ward & Hughes, and thirteen still remain to be filled, their subjects having already been selected.

Thurgarton.—The two windows at the east end of the chancel of Thurgarton Church have been filled with stained glass. The subjects illustrate the life of St. Peter. The architecture being Early English, the glass has been designed and executed in accordance with that style. Each window consists of two bays or lights with a quatrefoil under the arch. The first subject represents the call of St. Peter by Our Lord. The Saviour is standing on the sea shore, beckoning to St. Peter and St. Andrew, the former of whom is in the act of stepping out of the boat. The second is Our Lord walking on the sea and encouraging St. Peter to come unto him. The third illustrates the commission of Our Lord, "Feed my sheep"; and the fourth, the Saint delivered from prison by the angel. In the tracery are circular medallions with angels bearing Scriptural texts. The work has been executed by Messrs. Wailes, of Newcastle-on-Tyne.

Southwell.—New coloured glass has been placed in two of the windows of the Collegiate Church. The two lights are long plain lancets of the Early English period, at the east end of the north choir aisles, and being separated by only a few feet of masonry have been treated as one window. The subject, treated as a mystery, is the Annunciation by the Angel Gabriel to the Virgin Mary. In the light to the left is the Angel Gabriel, clad in loose and flowing robe of silvery whiteness, slashed at the elbow with a sleeve of carmine, and embroidered all over with the emblematic rose of Sharon. In the other light, on the same level, but not as yet looking up to the angel, kneels the Virgin on both knees, clad in close-fitting dress of scarlet, but this is much concealed by the loose over-mantle which falls from the shoulders to the feet, of satiny whiteness. In each light, both above the Angel and above the Virgin, appear three seraphim, who join in singing from the scroll they hold before them. The picture of the Mystery of Annunciation occupies about two-thirds of the window. The space above the Annunciation is filled in with light figured glass, and in the window to the left is placed the monogram I.H.S. on a shield. Beneath the window is this inscription:—"In memory of Thomas Henry Shepherd, last Canon of the Collegiate Church of the Blessed Mary the Virgin of Southwell, who died xi February, mdccclxxiii., aged xciv."

Eaton (Norwich).—Mr. C. H. Capon, the executor of the late Mr. John Hewitt, has recently carried into effect the intentions of the deceased, by placing, at the cost of 100*l.*, a stained glass window in the chancel of Christ Church. The subject represented is the Resurrection of our Lord, and at the foot of the window is the following inscription:—"In memory of Mary, the wife of John Hewitt, who dieu March 15th, 1870, aged 56 years." The window, which is of three lights, is by Mr. J. R. Thompson, of Southwark, London.

DISSENTING CHURCH-BUILDING NEWS.

Idle. — A new chapel having become a necessity, the congregation applied to architects for plans, and out of a number submitted in a limited competition those of Mr. John P. Kay, architect, of Leeds and Idle, were selected. The contractors for the masons' work are Messrs. J. & S. Hobson, of Idle; for the carpenter and joiners' work, Messrs. Deacon & Whitaker, of Shipley; and the other branches to local tradesmen, amounting in the aggregate to 3,554*l.* 10s. The works will be carried out under the supervision of the architect. The building will be erected on the site of the present chapel in Bradford-road, in the Italian style of architecture, boldly treated. The front is divided into three bays, with cleansed and moulded ashlar pilasters and carved caps; the two outer bays are surmounted with domes, and are terminated with ornamental iron cresting. The height from the ground-line to the top of these is about 60 ft. In the centre bay will be formed the principal entrance doorway, with cleansed ashlar front, and having granite columns and carved caps and spandrels, and over this is a two-light

window with granite shafts and carved capitals, the whole surmounted with carved medallion and inscription in the centre. The dimensions of the main building are 72 ft. 6 in. by 51 ft., and the height from floor to ceiling 43 ft. Vestries and class-rooms are provided at the rear of the building, with organ-chamber over. The seats are circular on plan, all of which will be open, bench-ends being substituted in place of doors. Sitting accommodation is provided for over 600 persons. The roof will be a wagon-roof, with dressed and moulded timbers; the materials used in the exterior walls are pitch-faced delfstone wallstones, with cleansed ashlar dressings from the Idle quarries; and the interior woodwork is of pitch-pine.

Doncaster.—For some time past the minister and congregation of the Hall-gate Chapel have seen the desirability of improving and restoring their place of worship. The committee called in the advice of Mr. Athron, and the alterations which have since been carried out include the top of the front of the chapel being taken down, the whole made square, and through an alteration in the style of the windows, giving a more ornamental appearance to the building. The four-square pews on the ground-floor have been subdivided and made into six. A new organ, by Messrs. Meacock & Son, has been placed in the recess behind where the pulpit used to stand, and a platform has been constructed which combines a pulpit, table-pew, and Communion. Behind this, and in front of the organ, a gallery has been erected for the choir. The cost of these alterations has been about 1,000*l.* The edifice was reopened on the 3rd inst.

Strensall.—The foundation-stone of a new chapel for the Primitive Methodists of Strensall, near York, has been laid at that village. For nearly forty years past the local members of this body have had only an old cottage wherein to worship. Accordingly steps were taken to obtain a more commodious and suitable chapel, and the foundation-stone of the new building has been laid. The site of the chapel is the ground hitherto occupied by the cottage and garden referred to. It is centrally situate, and, though small in proportions, will accommodate the Primitive Methodists of Strensall. The building will be a plain brick and stone structure, and consist of but one room, the chapel, which will be nearly eight yards square. A gallery will occupy one end of the building. The cost is about 250*l.* The contractors are Mr. Harrison, builder, and Mr. Mansfeld, joiner, both of York.

Rhos. — On the 8th inst., Mrs. Dennis, of Hafodybwch, laid the memorial stone of a new Welsh Wesleyan Chapel, to be built at Rhos, at a cost of over 1,000*l.* The edifice is to accommodate 300 persons, and beneath the chapel there will be a school-room for 350 children. Mr. Edward Owen, of Rhos, is the builder, and Mr. Richard Davies, of Bangor, the architect.

Books Received.

Cremation of the Dead: its History and Bearings upon Public Health. By WM. EASSIE, C.E. London: Smith, Elder, & Co., Waterloo-place. 1875.

MR. EASSIE has brought together a considerable amount of useful information, on the subject of which he treats, and it may be expected that his volume will tend to increase the number of the friends of cremation. The volume includes illustrations and descriptive particulars of the Siemens apparatus for burning the dead, and is appropriately dedicated to Sir Henry Thompson, "in recognition of his enlightened advocacy of a practice prevalent in ancient times, but long abandoned to the great detriment of mankind."

Miscellanea.

An Architect's Savings Paying off the National Debt.—A curious will has just been proved, by which the National Debt is to receive a sum of money annually towards its reduction. It appears that Mrs. Foulston, the widow of the late architect, of Plymouth, has just died, at the age of eighty-seven years. She was possessed of a considerable fortune, her personalty being sworn under 78,000*l.*, a great part of which is left in annuities revertible to the Commissioners of the National Debt. The capital which is thus revertible to the National Debt represents an income of 2,300*l.* per annum.

Electricity as a Moving Power.—A San Francisco newspaper gives the following account of an invention on which a mechanic of that city has applied for a patent:—The principle is the construction, for driving wheels, of enormous electro magnets, which diverge from the centre in the same form as the spokes of an ordinarp wheel, the poles of each magnet terminating with the outer circumference. The electric circuit is complete as the magnet impinges upon the steel rail of the track. As the poles of each magnet forming the driving-wheel approach the track, an enormous magnetic attraction is exerted, and as they pass the centre, or perpendicular point of the magnet upon the track, the current is cut off from each particular magnet and the attraction abated. By the multiplication of driving-wheels of this description, the inventor expects to acquire any degree of power requisite, and accomplish any rate of speed at which a railroad car is capable of travelling, with no possible danger of the locomotives leaving the track. In place of the cumbersome steam-boiler and tender loaded with coal, the locomotive will carry a magnetic battery of immense power.

Wall Painting, Slapton Church, Towcester.—Another curious painting has lately been uncovered in this church. Just above the eastern pillar of the nave is the painting of "The Weighing of Souls," and above this, and extending to the point of the arch on either side, and bounded above by a square black border, is the last-found painting, about 12 ft. in length. The principal figure in it is a warrior in armour, mounted, and holding a tilting-spear in his left gauntlet, the plume on his helmet and on his horse's head being plainly conspicuous. On the right is represented a spacious castle, with closed gate and a portcullis, and on the top of the front parapet are two figures, seeming like those of a king and queen, with clasped hands. In front of the warrior is another female figure, and from her hands seems to hang a red cord, as if she were leading the horse. In three different places in the painting,—viz., on the top of the castle, in front of the warrior, and before the horse,—appears a singular plant, with broad leaves.

The Frescoes in the Royal Gallery.—In the House of Commons, on the 18th inst., Mr. Errington asked the First Commissioner of Works whether, considering how successful the treatment of Mr. Richmond, R.A., had been in preserving the frescoes by Maclise in the Royal Gallery from the destruction which threatened them, he would avail himself of the advice and services of the same distinguished artist and of his colleagues on the late committees of inquiry, to arrest the decay of such of the other frescoes as were not already too far gone. Lord H. Lennox said that the frescoes which had not been touched were those in the upper gallery of the House of Commons and four large ones in the House of Lords. He had already entered into communications with respect to them with the proper persons, and when the estimates of his department were before the House, he should probably be able to give a satisfactory answer to the question.

New Chapel and Schools, West Derby Workhouse.—At the meeting of the West Derby Board of Guardians, on the 17th inst., at the workhouse, plans drawn by Mr. Chambers, architect, were submitted, for the enlargement of the hospital and imbecile ward of the workhouse, for the erection of a chapel, and for the erection of schools, being something like the Mettray system, or which would be more properly described as having been drawn up on the pavilion system. Mr. Chambers said the cost of the enlargement of the hospital and imbecile ward would be 12,500*l.*; the church, 5,000*l.*; and the schools, 13,780*l.*, being a total of 32,280*l.* If, however, the building of that portion of the schools which at present would not be required were postponed, the cost would be 2,000*l.* less. After some discussion, the motion for the approval of the plans, and their reference to the Local Government Board, was carried.

The Severn Bridge Scheme.—It is stated that this undertaking will very speedily be commenced, the contracts both for the viaduct and railway having been practically let,—the former to the Hamilton Windsor Ironworks Company (Limited), of Liverpool and London, and the latter to Messrs. Vickers & Cooke, of London. The bridge contract is 190,000*l.*, and the railway work, 90,000*l.*, the period for completion being fixed at three years.

The Reredos in Denbigh Church.—The Bishop of St. Asaph refused some time since to consecrate the new church in Denbigh, and demanded the removal of the reredos, the central compartment of which contains sculptured figures. After the decision of the Judicial Committee in the Exeter case, the committee under whose direction the new church was erected, wrote to the bishop, asking him to receive a deputation on the subject. The bishop, however, replied that he still adhered to his opinion that the reredos as sculptured was illegal, and that he could not conscientiously consecrate the church. The right rev. prelate's letter concluded with the expression of a hope that the committee would substitute some other subject for that now occupying the central compartment of the reredos, and he would then cheerfully accede to their wishes and consecrate the building.

Sale of the Elephant and Castle Theatre. On the 18th inst., the Elephant and Castle Theatre, which was erected only some two or three years ago, was sold by auction, at the Mart, Tokenhouse-yard, by Messrs. Bray, Webb, & Hart, by order of the mortgagee. The theatre was stated to be held on lease for fourteen years, at a ground-rent of 380*l.* a year, with the option of renewing for a term of ninety-nine years, and also with power to purchase the freehold at a fixed price. (This was stated to be 7,500*l.*) It was further stated that the ground upon which the theatre stands covers an area of 10,200 feet, in addition to which there were six railway arches and a covered way included in the purchase. These are held on lease from the London, Chatham, and Dover Railway Company for a thousand years, at a peppercorn rent of 6*l.* a year. The property was knocked down for 2,750*l.*

New Railway Tunnel, Clifton. — The tunnel which has been bored under Durdham Down, and which, as forming one section of the works of the Clifton Extension Railway, will put the Great Western, Midland, and Bristol and Exeter systems into direct communication with the Channel Docks at Avonmouth, is now completed. The length of the tunnel is 1,737 yards, and the gradient is 1 in 64. It has been bored through rock of the hardest description, every foot of which had to be blown away. Mr. W. J. Lawrence, who is constructing the Channel Docks, was the contractor for the work, but the boring of the tunnel was sub-let to the Machine Tunnelling Company.

Fleet-street and Temple Bar.—The Commissioners of Sewers had before them, at their last meeting, a scheme brought forward by their engineer for widening Fleet-street in the vicinity of Temple Bar by throwing back the houses on the southern side of the street. It was also suggested by the engineer as a part of the scheme that a new Bar should be erected in uniformity with the new Law Courts, or that the present Bar should be placed in the centre of the widened roadway, with room on each side for vehicles to pass. The Finance and Improvement Committee were authorised to confer with the City Lands Committee and the Metropolitan Board of Works upon the whole question of the improvement.

Art Prizes Won by a Bricklayer.—At the Warrington School of Art, Mr. Benjamin Jameson, a student, has obtained a national scholarship from the Department of Art, South Kensington, value 52*l.* per annum. Mr. Jameson will be the third national scholar appointed from this school at present studying at South Kensington. Mr. Jameson entered the School of Art in the occupation of a bricklayer, and has been awarded by the Department of Art the gold medal, one Queen's prize in national competition, four third-grade prizes for four years, with a free studentship in the school, and he held the appointment of art pupil teacher for the year 1874. We shall look forward with pleasure to Mr. Jameson's progress.

A District Surveyor Dismissed.—At the meeting of the Metropolitan Board of Works, on the 19th inst., a report was presented from the Works Committee, reporting on the various references made to them as to the conduct of Mr. C. A. Long in the discharge of his duties as district surveyor of St. Mary, Newington, and part of Lambeth, and recommending that Mr. Long's services be dispensed with, on the ground of grave irregularities in the discharge of his duties. On the motion of Mr. Richardson, the report was adopted.

A Building Material.—We are asked by more than one correspondent to mention that Herr Arntz, of Plagwitz, near Leipzig, has succeeded in the formation of composition blocks of novel character for building purposes, and that patents have been granted him for this country as well as for other European States. The surface of the blocks is said to be quite smooth and impervious to moisture and air, if that be any advantage. Further, they are grooved and fit into each other, mortar and plaster being dispensed with, and the building is habitable as soon as completed. It is impossible to determine from this description whether there be any advantageous novelty in this invention or not. We shall see.

Death in a Flue.—At the Cambridgeshire Assizes, on the 22nd, William Wyer, a master sweep, residing in Cambridge, was charged with the manslaughter of George Brewster, a boy about twelve years of age. At the Cambridge and Isle of Ely Lunatic Asylum, Pulbourne, in February, the prisoner was employed to clean out the flues connected with some large boilers in the asylum, and had ordered the boy to take his clothes off and get into the flue, which measured only 12 in. by 6 in. at the orifice and 12 in. by 7½ in. inside, and clean it out. The boy obeyed, and was suffocated. A verdict of guilty was returned, and the prisoner was sentenced to six months' hard labour.

The Cole Testimonial.—On the 19th inst., at a meeting of the executive committee of the Cole Testimonial, held at Grosvenor House, the committee authorised the preparation of a decorative memorial tablet, with a portrait of Mr. Henry Cole, in mosaic; also a marble bust; and it is intended to offer these to public institutions. The balance of the amount subscribed will be placed at the disposal of Mr. H. Cole. On the same day Mr. Cole received intimation from the Prime Minister that her Majesty had been pleased to make him K.C.B. He must now, therefore, be spoken of as Sir Henry.

Carriage-road through St. James's-park. A meeting has been held to consider the best means to be adopted for the construction of a carriage-road through St. James's Park. The chairman said the want of a carriage-road through St. James's Park from Queen Anne's-gate to Pall-mall, by way of St. James's Palace and Marlborough House, had long been felt. For the benefit of foot-passengers, a bridge across the ornamental water had been constructed, and it was now desired that this bridge should be widened, which could be done at a moderate expense, and made available for carriage-traffic.

The "Quarry Wall."—On the 18th inst. the right to what was described as one of the most valuable marble quarries in the county of Devon was tried at Exeter by the Lord Chief Baron. It appeared that a lease was granted for fourteen years of a marble quarry at Ipplepen for 75*l.* a year. The right was defined as "all within the quarry wall," and the question was whether these words applied to an inner or outer wall. The jury found in favour of the latter, and the result is that the plaintiff, instead of having about one acre, will now be possessed of five acres, and marble lies underneath the whole.

Accident.—On Tuesday afternoon Alfred Wall and William Hawkins, labourers, were at work on the sixth story of a mill in course of demolition at Staleybridge. Wall was endeavouring to force out a beam from the ceiling with a crowbar, when the beam suddenly gave way, carrying with it a large portion of the wall. Hawkins, seeing the wall totter, jumped off the top and broke his ankle. Wall was carried to the bottom with the mass of falling brickwork, and he died shortly afterwards.

Bad Dwellings.—The evil state of West Cheshire cottages is again being exposed, and very properly. At one cottage in the little hamlet of Buerton an inspector found that there was only one miserable bed-room, about 13 ft. by 8 ft., which served to accommodate no fewer than nine persons. The rain came through the roof, there was no back door, the drainage outside was a great nuisance, and, to add to the dismal picture, it is stated that the corpse of a child was laid out at the foot of the bed underneath the window.

Church Extension at Dudley.—The contract for the proposed new church of St. Luke, at Dudley, is taken, and the builder (Mr. Nelson) has commenced the work.

St. Peter's Church, North Shields.—On Sunday last, St. Peter's Church, North Shields, was re-opened for divine worship, after having undergone certain improvements. During the past fortnight workmen have been engaged fixing a reredos at the east end of the church. The reredos (designed by Mr. A. Salvin, to whom the restoration of Alnwick Castle was entrusted by Duke Algernon) is executed in Caen stone, coloured marbles, and alabaster.

Sale of Manley Hall.—We are informed that the Manley Hall estate, including the mansion, the conservatories, ferneries, and shrubs, and the 80 acres of freehold land on which they stand, has been purchased from Mr. Sam Mendel by Mr. Ellis Lever, of Spring Bank, Bowdon, who is well known in Manchester as the principal of the Midland Coal Company. The estate realised, we understand, nearly 150,000*l.*

Raising the "Dunphaile Castle."—This vessel, having caught fire in the West India Docks last week, was scuttled. The task of raising her again was successfully accomplished on Tuesday, by the simple process of slinging over her forecastle two of Hayward Tyler's self-containing steam pumps, which work in any position without fixing, and require only to be supplied with steam by a flexible pipe from the boiler of a steamboat moored alongside.

The Paving of Oxford-street.—The question of the future paving of the great western thoroughfare of the metropolis, Oxford-street, has at last been determined by the Marylebone vestry, under whose control it is placed. The committee had ten separate descriptions of wood paving under consideration, and after mature deliberation have resolved to recommend to the vestry for adoption that which is known as "Henson's patent paving blocks."

Organised Charity.—Mr. Francis Peek has agreed to give the Charity Organisation Society the sum of 1,000*l. per annum*, on condition that it will co-operate with the members of the School Board so far as to investigate the causes of the distress brought to light by their visitors, and to assist a certain class of cases which may be described as those of deserving persons whose cases can be permanently benefited by temporary aid, and this the society has agreed to do.

Widening of Chancery-lane.—The Works Committee of the Metropolitan Board of Works recommended on the 19th inst., with reference to the proposed widening of the north-west corner of Chancery-lane, that the Board should agree to the sum of 5,000*l.* as the amount required for the purchase of the ground shown upon a plan forwarded by Mr. I'Anson. The recommendation was adopted.

Exhibition of Photographs at Reading. Mr. J. O. Griffits, the Recorder of Reading, has offered to exhibit his valuable collection of photographs of ancient buildings and works of art, on condition that the exhibition is to be quite free to all classes, the Recorder generously insisting on paying all expenses. The exhibition is to take place at the Town Hall from the 12th to the 15th of April.

Foul Cisterns in the City.—Dr. Sedgwick Saunders, the medical officer for the City, has reported to the Commissioners of Sewers on the foul condition of the water-butts and cisterns in some of the City courts, where diarrhœa and fever are rarely absent. He recommends the immediate erection of a number of stand-pipes, which were intended to be supplied some time ago.

House Property in the City.—An estate, leasehold for a term expiring in 1897, comprising six houses in Warwick-lane, Paternoster-row, and ten houses in Oxford Arms-passage, with the old inn known as the Oxford Arms, let on tenancies expiring in 1878, and producing 890*l.* per annum, which was to have been submitted to auction by Mr. James Beal, has been sold by private contract for the sum of 15,950*l.*

Filtration of London Water.—In his monthly report upon the Metropolitan water supply Major Frank Bolton points out that the rate of filtration should not exceed 2½ gallons per square foot of filter-bed in an hour; this will give 540 gallons per square yard each twenty-four hours, and at this rate filtration should be effectual.

Parisian Archæology.—A church has been discovered recently upon the site of the Church of St. Sulpice, Paris, in the style of the thirteenth and fourteenth centuries.

Therfield Church Ceiling.—The Rev. Mr. Hale, in reply to our observation as to the age of this ceiling, says that the fact of the restoration of the chancel by Bishop Turner is recorded on a cedar tablet on the wall, and that the date is also fixed by the letters F. T. and the figures 78, which are on the end of the ceiling itself where it crosses the chancel arch.

The Underground Fire at South Shields. The underground fire at South Shields again presents an alarming appearance, and is extending. Workmen are employed by the agent of the University of Durham constructing a trench to prevent the fire from extending to houses belonging to them in Commercial-road.

Destruction of Beaufort House.—An extensive fire took place on the 20th inst. on the premises occupied by M. Eugène Rimmel as a manufactory for scents and fancy articles, and formerly known as Beaufort House, in the Strand. The opportunity should be taken to get access to the Embankment.

Memorial of Thanksgiving for the Recovery of the Prince of Wales.—The completion of the restoration of St. Margaret's Church, King's Lynn, which has been effected as the Norfolk memorial of thanksgiving for the recovery of the Prince of Wales, is to be celebrated on Wednesday, the 31st inst.

Marnhull, Dorsetshire.—The new schools in this parish are just completed on the site of ground given by the Dowager Marchioness of Westminster, in a commanding position close to the church and rectory. The edifice was erected by Mr. Miles, of Shaftesbury, under the direction of Mr. J. Soppitt.

Social Science Congress.—The Council of the Social Science Association has fixed October 6th to the 13th as the period for holding the Congress at Brighton this year. It has also authorised an Exhibition of Sanitary and Educational Appliances and Apparatus, to be held at the same time in connexion with it.

Opening of a Baptist Chapel in Rome.—The new chapel is situated in the Piazza San Lorenzo. The premises were bought by the Baptists for 12,000*l.*, and were then converted into a place of worship. There are 300 seats. The chapel is called the Apostolic Church of Christ.

Institution of Civil Engineers.—On Saturday evening last, according to the daily papers, the annual dinner of the Institution of Civil Engineers took place at Willis's Rooms. H.R.H. the Prince of Wales honoured the company with his presence.

Wood Paving.—Following the example of the metropolis, Birmingham has gone in for wood paving, the Town Council having entered into a contract for laying down 20,000 square yards of wood paving in the most crowded thoroughfares.

The Fall of a Stand at Lincoln.—At Retford Assises, on Monday, a special jury awarded Mr. Howett 250*l.* for damage sustained by the fall of a stand at the last Lincoln Spring Meeting. The defendants were the race committee.

Proposed New District.—The Metropolitan Board of Works have under consideration a proposal for adding the district of South Hornsey to the Metropolitan district, for the purposes of the Metropolitan Management Acts.

Winter Garden, Bournemouth.—The Bournemouth Winter Garden Company have arranged with contractors for the commencement of their winter garden, which is to be completed within twelve months.

A Fever Hospital for Taunton.—At a meeting of the Taunton Board of Guardians on the 17th inst., it was resolved to purchase ground outside the town for the erection of a fever hospital.

Mr. J. B. Waring, Architect.—We hear with regret that Mr. Waring died at Hastings on the 23rd inst. We have before us, at present unnoticed, his last work, "Ceramic Art of Remote Ages."

Monumental.—The sum of 1,200*l.* has been subscribed towards the erection of a monument in Glasgow to the poet Campbell. About 300*l.* are still required.